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| Speaker Transcript #1: Financial Literacy | Timestamp  | Text  |
| Teacher  | 00:00:04  | We're moving on to financial literacy. You covered a little bit of this last year. So we covered simple interest last year. Did y'all do compound interest?  |
| Student  | 00:00:20  | Yes.  |
| Student  | 00:00:21  | I don't know.  |
| Student  | 00:00:22  | Yes.  |
| Teacher  | 00:00:24  | Compound interest, simple interest. Then, you covered taxes, right? Did you cover college?   |
| Student  | 00:00:35  | Yeah, I think so.  |
| Teacher  | 00:00:38  | This year we're doing simple interest, compound interest, college, and methods of payments like what's the better way for me to pay with something, whether it be a credit card or a debit card or a gift card and what they make. So we're starting with simple interest. Today, we will be able to solve problems involving simple interest. By the time you leave here, hopefully, you know the difference between a principal, a rate, time, and interest. Time, does anyone remember time what it's always in?  |
| Student  | 00:01:34  | Years.  |
| Teacher  | 00:01:35  | Yes, time has to be in years. So if they give us time in months, do we know how to convert months to years?  |
| Student  | 00:01:42  | Times 12.  |
| Teacher  | 00:01:45  | Close.  |
| Student  | 00:01:46  | Divide by 12.  |
| Teacher  | 00:01:47  | Divide by 12. So we're going to be dividing by 12 or given months. Rate. How about rate? Do we leave it as 5% to work with it?  |
| Student  | 00:02:04  | Yeah.  |
| Student  | 00:02:07  | No. We have to change it.  |
| Teacher  | 00:02:09  | We have to change rate to a?  |
| Student  | 00:02:11  | Decimal.  |
| Teacher  | 00:02:12  | Decimal. So rate needs to be changed to a decimal.  |
| Teacher 2  | 00:02:14  | So anytime you have an interest rate, a percent, 5%, 6%, 2%. How do we change it to a decimal?   |
| Teacher  | 00:02:23  | Change it to a decimal. Does anyone know what principal stands for?  |
| Student  | 00:02:30  | The person that's at the head of the school.  |
| Teacher  | 00:02:33  | Different principal. We're talking about money. Yes.  |
| Student  | 00:02:37  | The amount of money you borrowed.  |
| Teacher  | 00:02:40  | So it's money that is borrowed or money that is invested. We have to pay interest on money that is borrowed. We have to pay interest on money that is earned. We earn money on money that is invested. There is interest on money that is invested.   |
| Teacher 2  | 00:03:00  | So if you put money into a savings account, you can earn interest. The bank is going to pay you.  |
| Student  | 00:03:08  | Why?  |
| Teacher 2  | 00:03:10  | Because they're using our money to make money. So they pay us the money.  |
| Teacher  | 00:03:15  | So they'll pay you about 1% interest but they are probably really earning like 3% on our money. So you're getting very little interest.  |
| Teacher 2  | 00:03:27  | They're making three times as much.   |
| Teacher  | 00:03:30  | You really don't make a whole lot of interest in checking or savings accounts unless you have like a million dollars. Then you will see a big difference.  |
| Student  | 00:03:44  | So if you have like a million dollars, you would be getting like $10,000 from the bank.  |
| Teacher  | 00:03:50  | Yeah. So then you could live off of that and never touch your million.  |
| Teacher 2  | 00:03:55  | Something a little bit more than a savings account would be a certificate of deposit. You can put money into a certificate of deposit or some kind of money market account, which makes a little bit more interest than just a general savings account.  |
| Teacher  | 00:04:09  | But then they give you stipulations on those accounts.  |
| Teacher 2  | 00:04:12  | Right.   |
| Teacher  | 00:04:14  | Like you can only write three or four checks a year or something like that.   |
| Teacher 2  | 00:04:18  | It's not totally [inaudible].  |
| Teacher  | 00:04:20  | Yeah. So you wouldn't use one of those accounts if you were saving money for taxes to pay your taxes at the end of the year or to buy big purchases like―  |
| Student  | 00:04:32  | A car.  |
| Teacher  | 00:04:33  | A car.  |
| Student  | 00:04:35  | A house.  |
| Teacher  | 00:04:35  | Even putting a down payment on a house. You want put money in one of those accounts because you build more interest. This unit actually relates to you a lot.  |
| Teacher 2  | 00:04:50  | Real life.  |
| Teacher  | 00:04:51  | Real life. It is real life. You will live this at some point in time.   |
| Teacher 2  | 00:04:57  | Yeah.  |
| Teacher  | 00:04:58  | Normally, I know right out of college my first credit card I thought, ooh, this is free money, right. I can go buy what I want to buy, but when you're not making a whole lot of money, it's hard to make full payments. If I spent $2,000, I couldn't write a check for $2,000 when I was making less than $2,000 a month as a teacher back then. So I could make maybe the minimum amount of payment. The problem is what was left I was charged more interest than the minimum amount of payment. I would've never paid that off.  |
| Teacher 2  | 00:05:41  | Credit card have extremely high interest rates.  |
| Teacher  | 00:05:44  | Yeah like 17%, 22%, 25%. Now, they allow you to put $15,000 to $20,000 on one which is a lot. So we're going to work some problems. We're going to find with this foldable your interest, we're going to find principal, and we're going to find rate, and we're going to find time. I'm not sure last year if you found each of these pieces or did you just find interest?  |
| Student  | 00:06:26  | We found all of them.  |
| Teacher  | 00:06:28  | You found all of them. OK. So then this should kind of be a review, right? So put your foldable like this facing you, and then we're going to fold the bottom up. Again, the words are facing you. Fold the bottom up and then fold the top down. So it tells you what interest is. Interest is the money paid on top of the principal. Principal is the amount of money borrowed or invested. Percentage charged or earned is your rate. So this is a percent and we always need to remember to change it to a decimal. To change a percent to a decimal, does anybody remember how to do that?  |
| Student  | 00:07:41  | Move the decimal two times to the left.  |
| Teacher  | 00:07:44  | Say it?  |
| Student  | 00:07:46  | Move the decimal two times to the left.  |
| Teacher  | 00:07:47  | We can move that decimal two times to the left. Another way to remember a percent is always out of how much?  |
| Student  | 00:07:54  | 100  |
| Teacher  | 00:07:55  | 100. So you can divide that number by 100 and get your answer every time. Time again is in years. If it isn't in years and if they give you months then you're going to divide it by what?  |
| Student  | 00:08:17  | 12  |
| Teacher  | 00:08:18  | 12 to figure out how many years.   |
| Silence  | 00:08:21  | [silence]  |
| Teacher  | 00:08:34  | Are we ready? To buy a car, Sam borrowed $12,000 for five years. What does borrowed [audio cut out] $12,000? Is that going to be your―  |
| Student  | 00:08:53  | Principal.  |
| Teacher  | 00:08:53  | Interest, principal, rate, or time?  |
| Student  | 00:08:56  | Principal.  |
| Teacher  | 00:08:59  | It's your principal. Then, we have five years at an annual simple interest rate of 6%. So that is your rate. Now, the questions they are asking you, how much interest will he pay and what is the total amount that he will pay? He will repay? So I equals PRT. Start with the formula. We're finding our interest. Principal is $12,000. Rate, Augustine, how am I going to change this to a rate? What do I need to do to 6%?  |
| Student  | 00:09:58  | Change it to a decimal.   |
| Teacher  | 00:09:59  | Yep. What decimal is that going to be?  |
| Silence  | 00:10:02  | [silence]  |
| Teacher  | 00:10:06  | So percent is out of what number?  |
| Silence  | 00:10:07  | [silence]  |
| Teacher  | 00:10:14  | When you get a grade, percent is out of how much?  |
| Student  | 00:10:16  | 100  |
| Teacher  | 00:10:17  | So same thing, percent is out of 100 so you're going to divide it by 100. So what percent do I get?  |
| Student  | 00:10:26  | 0.06.  |
| Teacher  | 00:10:27  | 0.06 and years is just 5.   |
| Silence  | 00:10:32  | [silence]  |
| Teacher  | 00:10:43  | Anyone lost on how we're going to calculate that?  |
| Teacher 2  | 00:10:48  | Does everybody understand how we got those three numbers?  |
| Silence  | 00:10:52  | [silence]  |
| Teacher 2  | 00:10:55  | [inaudible]  |
| Teacher  | 00:10:59  | What you're borrowing is your principal.   |
| Teacher 2  | 00:11:03  | If helps to label each part sometimes.  |
| Teacher  | 00:11:06  | Yeah. Years is your time. Our percent is our rate. So punch that in your calculator and we get how much interest?  |
| Student  | 00:11:24  | [inaudible]  |
| Teacher  | 00:11:29  | So when I borrow $12,000, I have to pay the bank the $12,000.  |
| Student  | 00:11:39  | Plus.  |
| Teacher  | 00:11:39  | Plus $3,600. So I have to pay them both of these amounts. This is going to pay for my car and this is the money I'm paying them to borrow the money. So this is your interest which is the first question they're asking. Then it says, what is the total amount? This word total is going to come up a lot in this unit. You have to pay attention to what they're asking. To find my total, what am I going to add?   |
| Student  | 00:12:17  | [inaudible]  |
| Teacher  | 00:12:19  | What all of them?  |
| Students  | 00:12:21  | [crosstalk]  |
| Student  | 00:12:24  | $12,000―  |
| Teacher  | 00:12:24  | What of these am I going to add?  |
| Student  | 00:12:27  | $12,000 [crosstalk].  |
| Teacher  | 00:12:30  | What is $12,000? The principal. So I'm going to add principal plus what to get my total.  |
| Student  | 00:12:44  | Interest.  |
| Teacher  | 00:12:45  | Interest. So I'm going to do $12,000 and the interest. So how much am I going to pay them back?  |
| Student  | 00:13:03  | $15,600.00   |
| Silence  | 00:13:05  | [silence]  |
| Teacher  | 00:13:23  | Questions? So that's one that's just straightforward. Augustine, did you write that down?   |
| Silence  | 00:13:33  | [silence]  |
| Teacher  | 00:13:41  | Next one, again, you start with I equals PRT. So what have they given me in this problem?  |
| Student  | 00:13:53  | Interest.  |
| Teacher  | 00:13:56  | Interest. What else?   |
| Student  | 00:14:01  | The rate.  |
| Student  | 00:14:02  | Rate.  |
| Student  | 00:14:04  | And the time.  |
| Teacher  | 00:14:05  | And the time. Now, we go and we plug in what they gave us. What are we trying to find here?   |
| Student  | 00:14:11  | The principal.  |
| Teacher  | 00:14:13  | We're finding the principal. We've got interest. Do I know what P is?  |
| Student  | 00:14:23  | No.   |
| Student  | 00:14:24  | No.  |
| Teacher  | 00:14:25  | So you just put a P. What am I going to type in for rate?   |
| Student  | 00:14:34  | 0.35.  |
| Student  | 00:14:35  | 0.035.  |
| Teacher  | 00:14:38  | Yes. so we're going to take our 3.5% and divide it by 100, which moves that decimal two places. So this is one reason that students get things wrong because they don't change it to a decimal. Remember, rate has to be changed to a decimal. We have how many years?  |
| Student  | 00:15:03  | 4  |
| Teacher  | 00:15:08  | So we're missing P, so that means I'm solving for P. So I need to get rid of everything else and just go to the other side. So the first thing you do is simplify the equation. $3,500, you can't do anything with. What am I going to do with these numbers here?  |
| Student  | 00:15:26  | Multiply.  |
| Teacher  | 00:15:28  | So everybody multiply.  |
| Student  | 00:15:29  | 0.14.  |
| Silence  | 00:15:30  | [silence]  |
| Teacher  | 00:15:40  | Now what do I do?  |
| Student  | 00:15:41  | Multiply.  |
| Teacher  | 00:15:43  | Yep.   |
| Silence  | 00:15:44  | [silence]  |
| Teacher  | 00:15:53  | How much principal do I have?  |
| Student  | 00:15:54  | $25,000.00   |
| Silence  | 00:15:57  | [silence]  |
| Teacher  | 00:16:01  | When you punch that in the calculator, you should be doing $3,500 divided by 0.14.  |
| Silence  | 00:16:07  | [silence]  |
| Teacher  | 00:16:36  | Did everyone get that? Any questions on it? You're going to solve the next two the exact same way. So start with your formula. Now we've got to figure out what they gave us. So Mark borrowed $5,000. What does $5,000 represent?  |
| Student  | 00:17:12  | Principal.  |
| Teacher  | 00:17:12  | Principal. For two years to remodel the bathroom. If he repaid a total of $6,500―what does $6,500 represent?  |
| Student  | 00:17:29  | [crosstalk]  |
| Teacher  | 00:17:33  | Does it say interest?  |
| Student  | 00:17:35  | No.  |
| Teacher  | 00:17:36  | What's it say?  |
| Student  | 00:17:37  | Repaid.  |
| Teacher  | 00:17:40  | What does total consist of?  |
| Student  | 00:17:41  | Everything.  |
| Student  | 00:17:42  | Interest―  |
| Students  | 00:17:45  | [crosstalk]  |
| Teacher  | 00:17:49  | Principal and interest, right, is your total. How am I going to figure out what interest is? If I have my principal, can I figure out what interest is?  |
| Student  | 00:18:05  | Yes.  |
| Teacher  | 00:18:05  | How would I do that?   |
| Silence  | 00:18:06  | [silence]  |
| Student  | 00:18:14  | Find the interest and subtract the total.  |
| Teacher  | 00:18:19  | Find the interest and subtract for the total.   |
| Students  | 00:18:23  | [crosstalk]  |
| Teacher  | 00:18:30  | So this is your total. What does total consist of everybody?  |
| Students  | 00:18:35  | [crosstalk]  |
| Teacher  | 00:18:36  | What is it?  |
| Student  | 00:18:36  | Interest and total. Interest and how much it costs.  |
| Teacher  | 00:18:42  | Augustine, what is it?  |
| Student  | 00:18:45  | What? So your―  |
| Teacher  | 00:18:48  | I want to know what―  |
| Student  | 00:18:50  | Is the interest.  |
| Teacher  | 00:18:50  | ―what the total consists of.  |
| Student  | 00:18:54  | Everything with the interest [inaudible].  |
| Teacher  | 00:18:57  | I want to know the two words that total is equal to.  |
| Teacher 2  | 00:19:00  | Say it again. Everything.  |
| Student  | 00:19:01  | Principal and interest.  |
| Student  | 00:19:04  | Principal and interest.  |
| Teacher 2  | 00:19:06  | Principal and interest.  |
| Teacher  | 00:19:07  | Connor, if this is principal and interest, do I have one of the other things up here?  |
| Student  | 00:19:13  | Yes.  |
| Teacher  | 00:19:15  | What do I have?  |
| Student  | 00:19:16  | Principal.  |
| Teacher  | 00:19:17  | Principal. Can I figure out how much interest is here?  |
| Student  | 00:19:19  | Yes.  |
| Teacher  | 00:19:20  | What would you do?  |
| Student  | 00:19:21  | I would subtract the principal from the total and you get the interest.  |
| Teacher  | 00:19:24  | Yes.  |
| Teacher 2  | 00:19:26  | Very good.  |
| Teacher  | 00:19:27  | Thank you. I would take my total, subtract the principal to figure out how much interest I have, which is how much?  |
| Student  | 00:19:37  | $1,500.00   |
| Teacher  | 00:19:39  | Yes. So now I have $1,500 in interest. I know my principal. Do I know my rate?   |
| Student  | 00:19:54  | No.  |
| Teacher  | 00:19:55  | So I put an R there. My years is two. So I'm simply plugging in what each part is. Now, I need to solve the equation. $1,500 is all by itself so I don't mess with that. What can I combine over here?   |
| Student  | 00:20:24  | [crosstalk]  |
| Teacher  | 00:20:26  | What do I do with those two?  |
| Student  | 00:20:26  | Divide.  |
| Student  | 00:20:28  | Multiply.  |
| Teacher  | 00:20:30  | Multiply. $5,000 times 2 is?  |
| Student  | 00:20:33  | $10,000.00   |
| Silence  | 00:20:34  | [silence]  |
| Teacher  | 00:20:42  | How do I get the R by itself?  |
| Student  | 00:20:44  | Divide. Wait, no.  |
| Teacher  | 00:20:46  | Yes, the opposite of multiple is to divide. When you have a number and a letter next to each other it means multiple. So to solve it, you're going to divide. You want the variable by itself. You're isolating that variable. $1,500 divided by $10,000.  |
| Silence  | 00:21:11  | [silence]  |
| Student  | 00:21:20  | 0.15.  |
| Teacher  | 00:21:28  | Now, do you think that is your rate? Does it look like a rate?  |
| Student  | 00:21:33  | Yeah.  |
| Teacher  | 00:21:34  | Rate needs to be written in what?  |
| Student  | 00:21:36  | Percent.  |
| Teacher  | 00:21:37  | A percent. To work with it, it needs to be in a decimal but to see what it is, it needs to be a percent. So how do I convert this back to a percent?  |
| Student  | 00:21:48  | You go backwards two.  |
| Teacher  | 00:21:50  | We can move it two to the right or we could multiple it by 100. Either one.  |
| Silence  | 00:21:57  | [silence]  |
| Teacher  | 00:22:09  | So you all did problems like this last year.  |
| Student  | 00:22:11  | Yeah.  |
| Student  | 00:22:12  | Yep.  |
| Teacher  | 00:22:13  | So this is just a quick review, right? The next one says, how long was the money invested? What am I trying to find?  |
| Student  | 00:22:23  | The time.  |
| Teacher  | 00:22:26  | Time. So let's plug in what they gave us.   |
| Silence  | 00:22:29  | [silence]  |
| Teacher  | 00:22:37  | Do we know interest?  |
| Student  | 00:22:39  | Yes.  |
| Teacher  | 00:22:39  | Which one is interest?  |
| Student  | 00:22:42  | [crosstalk]  |
| Teacher  | 00:22:44  | Yep. What's your principal?  |
| Student  | 00:22:48  | [inaudible]  |
| Teacher  | 00:22:53  | My rate is?  |
| Student  | 00:22:56  | [crosstalk]  |
| Teacher  | 00:23:01  | We want to know T, so I will put T.   |
| Silence  | 00:23:02  | [silence]  |
| Teacher  | 00:23:14  | What am I going to do next?  |
| Student  | 00:23:16  | Multiply $3,000 times 0.05.  |
| Teacher  | 00:23:21  | $3,000 times 0.05. So punch that in your calculator.   |
| Silence  | 00:23:29  | [silence]  |
| Teacher  | 00:23:42  | What do we get?  |
| Student  | 00:23:43  | 150  |
| Teacher  | 00:23:47  | 150t. Your last step is going to be to do what?  |
| Student  | 00:23:56  | Divide.  |
| Teacher  | 00:23:56  | Divide.  |
| Silence  | 00:23:56  | [silence]  |
| Teacher  | 00:24:03  | Now, how many years is it going to take?  |
| Student  | 00:24:04  | 3  |
| Student  | 00:24:06  | 3  |
| Silence  | 00:24:07  | [silence]  |
| Teacher  | 00:24:23  | Do you think you can do this?   |
| Student  | 00:24:24  | Yes.  |
| Student  | 00:24:25  | No.  |
| Teacher  | 00:24:26  | It's a review. So we should be able to go quickly. So we're going to cover this for two days and move on to compound on Wednesday. I mean Friday.  |
| Student  | 00:24:34  | No.  |
| Teacher  | 00:24:37  | Quickly, let's take one and pass it back. You can do this on the back of this paper or you can do it on a separate sheet of paper.   |
| Teacher 2  | 00:24:53  | Separate sheet. Don’t do it on the back. We're going to have a total I calculated 11 problems on this.  |
| Teacher  | 00:24:59  | OK. We're going to have 11 problems. I am putting it on the back, just because I like everything on one piece of paper.   |
| Students  | 00:25:09  | [crosstalk]  |
| Teacher  | 00:25:30  | Let's get started. The first one, what are they asking us for?  |
| Student  | 00:25:36  | Interest.  |
| Teacher  | 00:25:38  | Yeah, so they're asking us for the interest. So they've given you principal, your rate, and look at time. What do I need to do with time?  |
| Student  | 00:25:55  | Divide by 12.  |
| Student  | 00:25:55  | Divide by 12.  |
| Teacher  | 00:25:56  | Divide by 12. So 6 months is going to be equal to what? What as a decimal.  |
| Student  | 00:26:04  | 2  |
| Teacher  | 00:26:07  | 0.5. 6 divided by 12. It's a half of a year. That's why we're converting it to years. On the back, I do I equals PRT. Your interest we're finding. Principal. What is your rate going to be? You've got to convert that rate to a decimal. So 5% is going to be what as a decimal?  |
| Student  | 00:26:48  | 0.5.  |
| Teacher  | 00:26:50  | You've got to move it two.  |
| Student  | 00:26:52  | 0.05.  |
| Teacher  | 00:26:52  | Your decimal is here, guys and you've got to move it two. 0.05. Multiply and get your answer.  |
| Silence  | 00:27:06  | [silence]  |
| Teacher  | 00:27:21  | How much interest?  |
| Student  | 00:27:22  | 0.50.   |
| Teacher  | 00:27:24  | 0.50. So then [inaudible] to the right. If you don't have work for number one like that, you aren't getting credit. Your work should match my work. It should not be on the front of this just scribbled or gibberish.   |
| Teacher 2  | 00:27:45  | Yes, you have to write the formula each time, because you're not going to know which part you're calculating for if you don't have it in front of you. Not just at the top. On each problem.   |
| Students  | 00:28:00  | [crosstalk]  |
| Teacher  | 00:28:08  | Guys, try to get through at least three more problems. We will come around and check them.  |
| Students  | 00:28:12  | [crosstalk]  |
| Teacher  | 00:28:38  | Let’s see, what are we solving for? What does it say? Find the interest rate. So write your formula down on a separate sheet of paper. Look at all of my work.   |
| Student  | 00:28:49  | I'm writing it on the front.  |
| Teacher  | 00:28:52  | OK.  |
| Students  | 00:28:54  | [crosstalk]  |
| Teacher  | 00:28:56  | Guys, when you're doing the second one. Let's see the second one and see where you go from there. Make sure you're doing this―  |
| Students  | 00:29:02  | [crosstalk]  |
| Teacher 2  | 00:29:35  | Interest earned is $60. Where does that go?  |
| Students  | 00:29:38  | [crosstalk]  |
| Teacher 2  | 00:29:42  | Interest earned. What does I stand for? So that goes underneath. Erase that. That goes underneath the I, because remember we're looking for the interest rate. We already know how much interest they make.  |
| Students  | 00:29:57  | [crosstalk]  |
| Teacher 2  | 00:30:06  | Do we have an interest rate yet?  |
| Student  | 00:30:08  | No.  |
| Teacher 2  | 00:30:09  | So carry down the R. Then, how long are they―?  |
| Students  | 00:30:19  | [crosstalk]  |
| Student  | 00:30:22  | Times 4.  |
| Teacher 2  | 00:30:23  | No.  |
| Student  | 00:30:23  | Times 3.  |
| Teacher 2  | 00:30:24  | Times 3. Are you sure you don't want to do this on a separate sheet of paper so you don't have to constantly flip over? Flip over, flip over, flip over a million times. I would do it on a separate sheet of paper.  |
| Students  | 00:30:34  | [crosstalk]  |
| Teacher 2  | 00:30:37  | Times 3.  |
| Students  | 00:30:42  | [crosstalk]  |
| Teacher 2  | 00:30:43  | Now, you're going to have what? What are you going to do next?  |
| Student  | 00:30:48  | [inaudible]  |
| Teacher 2  | 00:30:50  | Guys, on the second one, it's tricky because you have to convert it to a rate. So that means once you get your answer you have to do what with that number?  |
| Students  | 00:31:02  | [crosstalk]  |
| Teacher 2  | 00:31:05  | You got to turn it back into a percent.   |
| Students  | 00:31:07  | [crosstalk]  |
| Teacher  | 00:31:38  | Guys, you have about one minute left. Start putting your calculators up.   |
| Students  | 00:31:46  | [crosstalk]  |

Transcript #2: Scale Factor

|  |  |  |
| --- | --- | --- |
|  | Timestamp | Text |
|  | 00:00:00 | [crosstalk] |
|  | 00:00:26 | Oh, I get it.  |
|  | 00:00:28 | [crosstalk] |
|  | 00:00:52 | I like how some people are using their notes to try to figure this out. You just need one fraction and then you simplify it. That's what a scale factor is. What? Yeah it says find the scale factor. You're not setting up a proportion. You're not seeing if something is similar. You're just setting a scale factor.  |
|  | 00:01:16 | [crosstalk] |
|  | 00:01:23 | Is this your original?  |
|  | 00:01:24 | [crosstalk] |
|  | 00:01:27 | So, you put - what does that say?  |
|  | 00:01:29 | [crosstalk] |
|  | 00:01:32 | And that's simplified to what?  |
|  | 00:01:34 | [crosstalk] |
|  | 00:01:36 | One what? |
|  | 00:01:37 | [crosstalk] |
|  | 00:01:44 | Guys, you can use - this is your original. This is your new.  |
|  | 00:01:52 | [crosstalk] |
|  | 00:02:15 | A volunteer to come up and write? |
|  | 00:02:22 | [crosstalk] |
|  | 00:02:45 | Perfect. Look how quick they did it, too. That's how long this should be taking you. You're writing a one fraction guys. It was a reduction, so he did 4/8 to get 1/2. Here it says it's an enlargement and he did the large number which was 15/10 and simplified it to get 3/2. Perfect. What we're doing today. Today I will solve problems involving dilations. Hopefully by the end of the period you can say I can identify whether a dilation is an enlargement or reduction. We're doing basically the same thing. I can apply a scale factor to find coordinates for a new dilation. I can use the image and free image to find the scale factor. We've been doing it with the sides. you notice the word that changed here is coordinates. We're doing this on a coordinate plane. That's what is the new part. We're going to do this whole thing together. Think pink, two pink pages. And the faster we get through it, then you can start working on the work that we have. Now another wise thing to do would be to always use a pencil on this when you're dealing with coordinate plane because it's hard to erase.  |
|  | 00:04:37 | I don't have a pencil.  |
|  | 00:04:39 | [crosstalk] |
|  | 00:04:43 | Here we go.  |
|  | 00:04:45 | [crosstalk] |
|  | 00:04:50 | Otherwise you need to be real careful.  |
|  | 00:04:53 | [crosstalk] |
|  | 00:04:58 | Dilations on a coordinate plane. To dilate a figure on a coordinate plane, we're going to multiply X and the Y value.  |
|  | 00:05:13 | [silence] |
|  | 00:05:25 | Going to multiply the X and the Y value of each multiple pair by the given scale factor. What are we doing with our scale factor? We're multiplying. You always multiply a scale factor no matter what. Describe-- |
|  | 00:05:54 | [crosstalk] |
|  | 00:06:03 | Guys we really need to make sure our pencils and stuff are sharpened before class. Describe what should happen if the scale factor is greater than one. What happens if my scale factor is greater than one?  |
|  | 00:06:16 | Multiply by [inaudible]  |
|  | 00:06:18 | What happens to the shape?  |
|  | 00:06:19 | It gets bigger, the shape. |
|  | 00:06:21 | It gets bigger. It is enlarged. This is kind of a repeat of what we've been talking about. Describe what should happen if the scale factor is less than one.  |
|  | 00:06:37 | [crosstalk] |
|  | 00:06:42 | It reduces. When a dilation has occurred on a coordinate plane, you can find the scale factor by choosing corresponding sides or vertices and setting up a ratio. This is how your ratio is going to be. Your new over your original or we call it our image over our pre image.  |
|  | 00:07:17 | [silence] |
|  | 00:07:37 | Dilate the rectangle shown by a scale factor of 1/3. So, what am I going to do with 1/3? What am I going to do? |
|  | 00:07:46 | Divide by three.  |
|  | 00:07:48 | Multiply. Which is the same as? |
|  | 00:07:54 | Dividing by three.  |
|  | 00:07:55 | Perfect,. Either/or. You can divide by 1/3 or you multiply by 3.  |
|  | 00:07:59 | If you multiply the factor and you [inaudible] |
|  | 00:08:04 | [crosstalk] |
|  | 00:08:07 | Multiply by 1/3 or divide by 3. You're going to first find your coordinates A, B, C, D.  |
|  | 00:08:19 | [silence] |
|  | 00:08:23 | Then once we find those coordinates, we're going to then dilate them and find A prime, B prime, C prime and D prime.  |
|  | 00:08:39 | Why do you call them prime?  |
|  | 00:08:40 | This little mark means prime. All together it is called your image. this is pre-image, image.  |
|  | 00:08:48 | [silence] |
|  | 00:08:58 | Somebody give me the coordinate for A.  |
|  | 00:09:01 | Negative 5, 3.  |
|  | 00:09:03 | 3, negative 5.  |
|  | 00:09:05 | It's negative 6 and positive 3.  |
|  | 00:09:09 | It looks like a 5.  |
|  | 00:09:11 | I know. It does. And then how about the coordinates for B? |
|  | 00:09:17 | [crosstalk] |
|  | 00:09:22 | OK guys, X comes first. So, you move left to right first and then Y. C is? |
|  | 00:09:32 | 6, negative 3.  |
|  | 00:09:33 | [silence] |
|  | 00:09:35 | And D is? |
|  | 00:09:37 | Negative.  |
|  | 00:09:39 | Negative 6, negative 3.  |
|  | 00:09:41 | [silence] |
|  | 00:09:45 | Now we apply our scale factor. We're going to take each of these coordinates and we're going to multiply them times 1/3. Wilson told us that multiplying by 1/3 is the same as dividing by 3. You can punch it into your calculator as 1 divided by 3 times 6. 1 divided by 3 times 3 or you can just do negative 6 divided by 3. 3 divided by 3. Negative's on the bottom.  |
|  | 00:10:24 | [crosstalk] |
|  | 00:10:29 | See if you can find your new coordinates.  |
|  | 00:10:31 | You put in an image?  |
|  | 00:10:32 | Head up. Let's go.  |
|  | 00:10:35 | You put in an image box?  |
|  | 00:10:37 | Yes. Your new answers.  |
|  | 00:10:38 | [silence] |
|  | 00:10:40 | Take these coordinates, divide them by 3. Quickly.  |
|  | 00:10:46 | [crosstalk] |
|  | 00:10:51 | Hunter, focus on your work. Quit talking with him please.  |
|  | 00:10:55 | I'm not even talking. He's the one who said I-- |
|  | 00:10:58 | Y'all haven't stopped communicating. Everybody else is doing exactly what they need to do.  |
|  | 00:11:02 | [silence] |
|  | 00:12:07 | OK, did everyone get them? |
|  | 00:12:09 | [silence] |
|  | 00:12:14 | What do we get for A?  |
|  | 00:12:16 | Negative 2 and 1.  |
|  | 00:12:18 | What do we get for B? |
|  | 00:12:20 | 2, 1.  |
|  | 00:12:21 | C? |
|  | 00:12:22 | 2, negative 1.  |
|  | 00:12:24 | And D?  |
|  | 00:12:25 | Negative 2, negative 1.  |
|  | 00:12:26 | Yes. We're going to go ahead and do this part down here. It says how can we represent the dilation algebraically? You're going to take X and Y and basically you're going to say what you did with X and Y. What did we just do to X and Y?  |
|  | 00:12:51 | Divided by 3.  |
|  | 00:12:52 | We divided by 3 which is the same as timesing [ph] what?  |
|  | 00:12:56 | Times the 1/3.  |
|  | 00:12:58 | You took X and you multiplied it by 1/3 and you took Y and you multiplied it by 1/3. This is what an algebraic representation looks like for a dilation. It is a number right next to a letter, which means multiply.  |
|  | 00:13:19 | [silence] |
|  | 00:13:28 | [crosstalk] |
|  | 00:13:30 | Now we're going to take these new coordinates and we're going to plot them over here. Looking at these numbers, do you think this is going to be an enlargement or a reduction?  |
|  | 00:13:41 | Reduction.  |
|  | 00:13:42 | And we could tell because our scale factor is less than 1. Plot these points. You get negative 2, 1. 2, 1. and you notice how I'm putting A prime, B prime. 2, negative 1 and negative 2, negative 1.  |
|  | 00:14:16 | [silence] |
|  | 00:14:39 | [crosstalk] |
|  | 00:15:20 | The next part says, compare the ratios of corresponding sides. What do you notice? We just did the coordinates. Now we're going to count and compare the side lengths. If I count 1, 2, 3, 4, 5, 6. This side is 6 long and this side is 2. Everyone see where I'm comparing the side lengths?  |
|  | 00:15:48 | No. Oh yeah.  |
|  | 00:15:50 | I counted how many. 2 here and 6 here. If I set up my trunk so it would be 2/6 so this simplifies to 1/3.  |
|  | 00:16:05 | [crosstalk] |
|  | 00:16:26 | You could also set up a proportion and prove that they're similar. We could take 2/6 and 1, 2, 3, 4 over 12.  |
|  | 00:16:41 | [crosstalk] |
|  | 00:16:48 | Three we're going to cross out. Because we're going to talk about orientation later. Now we're going to just do what we've been doing. Same thing. We need to find the original, so E, F, G, H.  |
|  | 00:17:14 | [crosstalk] |
|  | 00:17:15 | E, F, G, H.  |
|  | 00:17:16 | Can we just do A, B, C, D instead? |
|  | 00:17:18 | And then E prime, F prime, G prime, H prime.  |
|  | 00:17:25 | [silence] |
|  | 00:17:48 | Here are your coordinates. We've got to figure it out. Negative 4, 2. F is going to be?  |
|  | 00:18:00 | 4, 2.  |
|  | 00:18:02 | G is? |
|  | 00:18:04 | 3, negative 1.  |
|  | 00:18:06 | [silence] |
|  | 00:18:08 | And then H is?  |
|  | 00:18:10 | Negative 3, negative 1.  |
|  | 00:18:13 | [silence] |
|  | 00:18:15 | And what does it say my scale factor is?  |
|  | 00:18:17 | 2 |
|  | 00:18:18 | We're going to take all these numbers and do what?  |
|  | 00:18:22 | multiply by 2.  |
|  | 00:18:23 | Multiply them by 2. Negative 4 times 2 is?  |
|  | 00:18:27 | Negative B.  |
|  | 00:18:30 | And 2 times 2?  |
|  | 00:18:32 | 4 |
|  | 00:18:34 | 4 times 2?  |
|  | 00:18:36 | 8 |
|  | 00:18:37 | 2 times 2?  |
|  | 00:18:39 | [crosstalk] |
|  | 00:18:40 | 3 times 2?  |
|  | 00:18:42 | 6 |
|  | 00:18:43 | 3 times negative 1.  |
|  | 00:18:45 | You mean 2?  |
|  | 00:18:46 | Oh sorry. Yes. 2 times negative 1 is negative 2. 3 times 2?  |
|  | 00:18:55 | Negative 6.  |
|  | 00:18:56 | Negative 6. And then 2 times negative 1?  |
|  | 00:18:58 | Negative 2.  |
|  | 00:18:59 | [silence] |
|  | 00:19:01 | It gets bigger.  |
|  | 00:19:04 | Yeah. When we look at them guys, it got bigger. That means this should be somewhere around it, right?  |
|  | 00:19:10 | Now how do we do the [inaudible]? |
|  | 00:19:12 | We would write XY and what do we do with each of these coordinates?  |
|  | 00:19:18 | Multiply them.  |
|  | 00:19:20 | Multiplied it by what?  |
|  | 00:19:21 | 2 |
|  | 00:19:22 | So, we did 2 and we multiplied X by it and we took 2 and multiplied all the Y's. This is the easiest one to recognize. There are about nine different algebraic representations we're going to discover over the next three weeks.  |
|  | 00:19:44 | Are we going to have a test on this?  |
|  | 00:19:46 | no we're going to have a quiz. It says algebraic. They're not [inaudible].  |
|  | 00:19:51 | Yeah, from here on out is algebra stuff.  |
|  | 00:19:55 | [crosstalk] |
|  | 00:19:59 | We finished all the boring stuff. Now we get into algebra.  |
|  | 00:20:03 | This is boring.  |
|  | 00:20:05 | Yeah, this is boring.  |
|  | 00:20:06 | Now we're going to plot these. We have negative 8 and positive 4.  |
|  | 00:20:16 | [crosstalk] |
|  | 00:20:20 | 8 and positive 4. Focus on what you're doing. G is 6, negative 2. Wilson?  |
|  | 00:20:36 | What? It's not me. It's him.  |
|  | 00:20:38 | Who said that? Yeah?  |
|  | 00:20:39 | Said what?  |
|  | 00:20:40 | Stop.  |
|  | 00:20:41 | What did I say? I've been laughing.  |
|  | 00:20:43 | H is negative 6 and negative 2.  |
|  | 00:20:50 | [crosstalk] |
|  | 00:20:56 | Now we draw your new shape.  |
|  | 00:21:01 | [crosstalk] |
|  | 00:21:29 | I, J, K.  |
|  | 00:21:32 | Wait, it's not K, I, J?  |
|  | 00:21:33 | No. You don't know you’re a, B, C? |
|  | 00:21:35 | Quiet.  |
|  | 00:21:38 | Wilson doesn't [inaudible] |
|  | 00:21:40 | [silence] |
|  | 00:21:44 | What is my scale factor on the next one?  |
|  | 00:21:48 | [crosstalk] |
|  | 00:21:53 | 3/2.  |
|  | 00:21:54 | If y'all don't like 3/2, when we divide that, does it become a pretty decimal? |
|  | 00:22:02 | Not yet. Just like 1.5?  |
|  | 00:22:04 | If you'd like to use the decimal you can, but when we use it algebraically, we have to use the fraction. 3 divided by 2 equals what?  |
|  | 00:22:17 | 1.5 |
|  | 00:22:19 | 1.5. But if you don't want to do that, remember this is simply 3 divided by 2 and then you would multiply it by whatever your coordinates are. And it gives the same thing. I coordinate is what?  |
|  | 00:22:38 | 0, 4.  |
|  | 00:22:40 | [silence] |
|  | 00:22:42 | J coordinate is?  |
|  | 00:22:43 | 4, negative 4.  |
|  | 00:22:44 | 4, negative 2.  |
|  | 00:22:46 | [silence] |
|  | 00:22:49 | negative 4, negative 4.  |
|  | 00:22:53 | [silence] |
|  | 00:22:58 | I would do 3 divided by 2 times 4 I could do?  |
|  | 00:23:05 | What? Wait. [inaudible].  |
|  | 00:23:08 | [crosstalk] |
|  | 00:23:10 | 3 divided by 2 times - I mean 3 divided by 2 times 4.  |
|  | 00:23:17 | Equals 6.  |
|  | 00:23:19 | Remember it's one and a half times. So, basically you're taking 4 and adding half back. So, that's how you get 6.  |
|  | 00:23:28 | [crosstalk] |
|  | 00:23:31 | You just add 2.  |
|  | 00:23:33 | For 4. But look at 2. You take the whole 2. Hunter, you would take the whole 2 and then half back. Would it be how much?  |
|  | 00:23:44 | [crosstalk] |
|  | 00:23:50 | No. Hey, I would punch it in the calculator.  |
|  | 00:23:54 | [crosstalk] |
|  | 00:23:55 | A whole is 2 and half of 2 would be?  |
|  | 00:23:58 | 1.5 |
|  | 00:23:59 | 1. So, it would be 3.  |
|  | 00:24:01 | Negative 6, negative 3.  |
|  | 00:24:03 | [crosstalk] |
|  | 00:24:15 | It got what? Yes.  |
|  | 00:24:18 | One.  |
|  | 00:24:19 | Enlargement.  |
|  | 00:24:20 | It's an enlargement because it's greater than 1.  |
|  | 00:24:24 | [crosstalk] |
|  | 00:24:27 | How do I write my algebraic representation? |
|  | 00:24:31 | X over 3, 2 XY?  |
|  | 00:24:38 | Yes.  |
|  | 00:24:39 | [crosstalk] |
|  | 00:24:45 | And now we would plot this. 0, 6 would be I prime.  |
|  | 00:24:55 | [crosstalk] |
|  | 00:24:57 | We have 6, negative 3.  |
|  | 00:25:03 | [crosstalk] |
|  | 00:25:08 | J prime. And then negative 6, negative 3. K prime.  |
|  | 00:25:20 | [crosstalk] |
|  | 00:25:32 | So, when we take tests over this, they're never going to have you redraw this shape. This is a lot of extra legwork we're doing. Basically they're going to give you a table, Wilson, and they're going to say what was the scale factor based on this table? If you look at your notes, this is how you find--Whoops, wrong notes. This is how we find our scale factor right here. We put the new over the original. Or we would do the image over the pre-image. Basically you're taking your prime and putting it over the original. Let's look at this.  |
|  | 00:26:19 | 0 divided by 2 would be 0.  |
|  | 00:26:21 | And 0s are excluded. I would do my prime which would be I prime. 0, 6 and put it over I.  |
|  | 00:26:33 | 0, 4.  |
|  | 00:26:34 | [silence] |
|  | 00:26:36 | 0s would cancel. We don't even look at those. This is the fraction that you would simplify. Which equals what? |
|  | 00:26:45 | 0, 2.  |
|  | 00:26:48 | [crosstalk] |
|  | 00:26:52 | Guys, you can figure out if you take both Ys, this got bigger, so which one goes on top? The big one. It would be 6/4 and you could find your scale factor. Some of us can just look at this and know well if I take 4, what am I going to multiply to get 6?  |
|  | 00:27:15 | [crosstalk] |
|  | 00:27:16 | You can also do it that way. This is what we're going into now. Finding the scale factor off of two pictures. We have our original and we have our new. Is everybody - can anybody tell me which one is my original? |
|  | 00:27:34 | L, M, N.  |
|  | 00:27:36 | L, M, N. OK?Perfect. Now I'm going to choose two coordinates that are corresponding. Two coordinates that are corresponding. What two coordinates do you want to use? Your Ls, your Ms. or your Ns?  |
|  | 00:27:54 | M.  |
|  | 00:27:54 | L.  |
|  | 00:27:55 | L.  |
|  | 00:27:57 | M, P.  |
|  | 00:27:58 | [crosstalk] |
|  | 00:27:59 | We're going to use L.  |
|  | 00:28:01 | [crosstalk] |
|  | 00:28:03 | We're going to take L and we can't really tell if this got bigger or smaller, right?  |
|  | 00:28:10 | It got bigger.  |
|  | 00:28:11 | This is the one that goes on top. Your image over your original. I need to find the coordinates for L prime.  |
|  | 00:28:26 | That's the small one, right? |
|  | 00:28:29 | It's the big one. |
|  | 00:28:30 | One with the dash.  |
|  | 00:28:32 | 10, 5.  |
|  | 00:28:33 | No, it's 5, 10.  |
|  | 00:28:34 | You do X first and then you go Y. 5 over what?  |
|  | 00:28:39 | 10 |
|  | 00:28:40 | It would just be 5, 20 is your coordinate. And then what was your L? |
|  | 00:28:49 | [crosstalk] |
|  | 00:28:54 | I want to be 4, 8.  |
|  | 00:28:55 | Now--Sh.  |
|  | 00:28:57 | [crosstalk] |
|  | 00:28:59 | You're off task. Stop.  |
|  | 00:29:01 | Guys, stop.  |
|  | 00:29:03 | [crosstalk] |
|  | 00:29:05 | You take this and these are your two fractions. They should simplify to the same thing. One of them normally is already simplified.  |
|  | 00:29:16 | [crosstalk] |
|  | 00:29:18 | Your scale factor is?  |
|  | 00:29:21 | [crosstalk] |
|  | 00:29:24 | We can't simplify it any further.  |
|  | 00:29:26 | Yeah you can.  |
|  | 00:29:27 | No you can't.  |
|  | 00:29:28 | Yeah you can.  |
|  | 00:29:29 | No you can't.  |
|  | 00:29:30 | [crosstalk] |
|  | 00:29:33 | We don't want a decimal.  |
|  | 00:29:34 | Oh, OK. Or it could go into 5.  |
|  | 00:29:36 | No it can't.  |
|  | 00:29:38 | [crosstalk] |
|  | 00:29:41 | 4 cannot go into 5.  |
|  | 00:29:42 | Not evenly. OK? So, let's do the next one. You try to come up with your scale factor. Choose two coordinates. You can choose the Ps, the Q or the R.  |
|  | 00:29:58 | [crosstalk] |
|  | 00:29:59 | Quietly and then we'll check to see if we come out with the same one.  |
|  | 00:30:04 | [crosstalk] |
|  | 00:30:53 | When you have it. Now, once you get your scale factor, guys, I want you to say, is that reasonable?  |
|  | 00:31:02 | Yes.  |
|  | 00:31:04 | Was this an enlargement or a reduction? You make that decision.  |
|  | 00:31:09 | [crosstalk] |
|  | 00:31:13 | Is it reasonable? Was that an enlargement or reduction?  |
|  | 00:31:16 | [crosstalk] |
|  | 00:31:20 | So, then guys—Yeah. Think. You're just--Think. Look. The scale, is it an enlargement or a reduction? Is it an enlargement or a reduction? The picture? What's happening?  |
|  | 00:31:38 | [crosstalk] |
|  | 00:31:42 | Which one's your original?  |
|  | 00:31:44 | I don't know.  |
|  | 00:31:45 | [crosstalk] |
|  | 00:31:47 | The bottom one. |
|  | 00:31:49 | Is your original? |
|  | 00:31:51 | [crosstalk] |
|  | 00:31:56 | That one has nothing to do with the next one.  |
|  | 00:31:57 | [crosstalk] |
|  | 00:31:59 | That means, Wilson, maybe we need to pay closer attention.  |
|  | 00:32:01 | Go back to your notes on page--The first one.  |
|  | 00:32:04 | [crosstalk] |
|  | 00:32:13 | Why? Why is it 1/3?  |
|  | 00:32:15 | [crosstalk] |
|  | 00:32:23 | Guys, listen. Somebody tell me how do I know which one is my original?  |
|  | 00:32:28 | [crosstalk] |
|  | 00:32:31 | Listen. Taren, turn around. How do I know which one is my original? |
|  | 00:32:37 | [crosstalk] |
|  | 00:32:39 | Original? The original has what? |
|  | 00:32:43 | The old one.  |
|  | 00:32:44 | The P.  |
|  | 00:32:45 | Does it have the little marks?  |
|  | 00:32:47 | No.  |
|  | 00:32:48 | No.  |
|  | 00:32:49 | Original does not have the prime marks. Your new one has the prime marks. So, you should have realized that was a reduction. So, that scale factor has to be less than one.  |
|  | 00:32:53 | [crosstalk] |
|  | 00:33:11 | Here we go. I did Q prime over Q. You could have done P or R. Again, it tells us right here we're going to do our image over our preimage or our new over our original. The next ones, you're just finding their scale factor as well. Let's look at nine. Did nine get bigger or smaller?  |
|  | 00:33:42 | Smaller.  |
|  | 00:33:44 | Smaller. So, which one goes on top? |
|  | 00:33:46 | 6 |
|  | 00:33:47 | You could do 6/9 and simplify it.  |
|  | 00:33:51 | 2/3. But it got bigger, so [inaudible]. A |
|  | 00:33:59 | Which we should notice guys, the prime one is always going on the top.  |
|  | 00:34:03 | Look, it's 1/3.  |
|  | 00:34:04 | How?  |
|  | 00:34:05 | 6/5.  |
|  | 00:34:07 | [crosstalk] |
|  | 00:34:09 | Sh,  |
|  | 00:34:10 | No, Let him talk. [inaudible]  |
|  | 00:34:13 | [crosstalk] |
|  | 00:34:28 | Wilson, because it is C. Prime over the original.  |
|  | 00:34:34 | Where did you get 3 on the grid?  |
|  | 00:34:35 | [crosstalk] |
|  | 00:34:41 | This coordinate right here is 3, 6.  |
|  | 00:34:47 | That doesn't make sense.  |
|  | 00:34:48 | [crosstalk] |
|  | 00:34:53 | Write the coordinates.  |
|  | 00:34:56 | [crosstalk] |
|  | 00:35:01 | Remember which one's A prime or A. Look up here. There's some vocabulary words to go with it. it said new over the original will always give you the scale factor.  |
|  | 00:35:13 | [crosstalk] |
|  | 00:35:16 | You can do it that way too. I was shortcutting it there but I'm thinking we probably need to write the entire thing.  |
|  | 00:35:22 | [crosstalk] |
|  | 00:35:27 | Again guys, it is your new over the original. You notice these are smaller, so the smaller one goes on top. Here these got larger so the larger ones are on top. When you simplify them, you get your scale factor. We're just going to take one set and simplify it. 6 goes into--Or 2 goes into 12, 6. 2 goes in 10, 5. That would be your scale factor. Sh. Here 9 divided by 1 is?  |
|  | 00:36:06 | 9 |
|  | 00:36:07 | 9 and it's positive because a negative divided by a negative is positive. You will be given coordinates where you'll have to find your scale factor as well. We're trying to catch up from the two days we spent last week to spend more time on volume and surface area, so we need to work on this to stay on track. Those are notes. Do not turn them into me. I want yesterday's work. I think that's the only thing that-- |
|  | 00:36:45 | [crosstalk] |
|  | 00:37:38 | OK, guys I'm going to get you started on the next thing because we still have eight minutes of class. So, have a seat with the yellow in front of you.  |
|  | 00:37:52 | [crosstalk] |
|  | 00:37:59 | That top is the warm up. That's not stapled. You have these two.  |
|  | 00:38:10 | [crosstalk] |
|  | 00:38:17 | We have our scale factor up here. Easy thing to do would be to go ahead and write your algebraic representation for each one because that is fast and easy. So, you could do it for each one of those and yes, we do put XY with the arrow. That's how it is written.  |
|  | 00:38:42 | [crosstalk] |
|  | 00:38:48 | Yes, last year.  |
|  | 00:38:51 | So this is 7th grade stuff?  |
|  | 00:38:53 | No. They took 8th grade in 7th grade.  |
|  | 00:38:59 | [crosstalk] |
|  | 00:39:07 | I put up here this. If you want to put them around here, that's fine. I don't want you to go back and redraw your new shape. I'm not going to make you redraw your new shape. I just want you to write your coordinates. This would be negative 4, negative 2. Right?  |
|  | 00:39:29 | How?  |
|  | 00:39:30 | Negative 4, negative 2?  |
|  | 00:39:32 | Oh, I'm on the wrong one. My bad. I was looking at number three.  |
|  | 00:39:35 | And B is going to be? Negative 2, 4. C is 4, negative 2. And then we apply our scale factor which was 1.5. We multiply all that. Those people who aren't doing this, you need to go through the motion of actually punching this in the calculator. Negative 4 times 1.5. It sticks. if you're not doing it, it's not going to stick.  |
|  | 00:40:13 | [silence] |
|  | 00:40:26 | Are we ever going to have to have this on a test? [inaudible]  |
|  | 00:40:32 | You continue to use this stuff, guys, through algebra 2. Just to let you know. So, this is really just a teeny, tiny part.  |
|  | 00:40:42 | Teeny, tiny?  |
|  | 00:40:43 | Yes. Compared to what you're going to do.  |
|  | 00:40:47 | [crosstalk] |
|  | 00:40:51 | What did we get for A prime? |
|  | 00:40:54 | I didn't do that because you didn't do that.  |
|  | 00:40:56 | [crosstalk] |
|  | 00:40:58 | I'm waiting for you to get the answers.  |
|  | 00:40:59 | [crosstalk] |
|  | 00:41:03 | Yes.  |
|  | 00:41:04 | [crosstalk] |
|  | 00:41:14 | Go to the next one. You're done with that. You don't need to redraw it. Did you have a question? Just checking?  |
|  | 00:41:23 | [crosstalk] |
|  | 00:41:26 | When you're done with that, move to the next one. These are the only four that you have to do that on. On the back, you're simply finding the scale factor. You're going to use U prime over U. V prime over V and you write the algebraic representation. This side is real easy.  |
|  | 00:41:51 | [crosstalk] |
|  | 00:41:52 | We're not supposed to do the front?  |
|  | 00:41:53 | Yes, you're doing both sides.  |
|  | 00:41:55 | [crosstalk] |
|  | 00:42:01 | If you want to feel like you're getting something accomplished, I would do all of the back. Or if you want to do the hard part on the front first.  |
|  | 00:42:08 | [crosstalk] |
|  | 00:42:36 | Mrs. X, do you know where the stapler is?  |
|  | 00:42:38 | [crosstalk] |
|  | 00:42:42 | Someone has it?  |
|  | 00:42:43 | [crosstalk] |
|  | 00:42:46 | Guys, who borrowed the stapler?  |
|  | 00:42:48 | [crosstalk] |
|  | 00:42:57 | Jacob, don't [inaudible] that yellow paper. That's the one you're turning in and you're not stapling your warm-up to that. You only staple the notes together.  |
|  | 00:43:07 | [crosstalk] |
|  | 00:43:08 | Wait, do we turn in our notes?  |
|  | 00:43:10 | No. No. Only thing I want is that yellow paper completed. No we're about to leave.  |
|  | 00:43:18 | [crosstalk] |
|  | 00:43:33 | OK, guys. Start packing everything up and putting everything away. Yes. It needs to be finished. You could probably finish it during advisory today. Put your calculators back. We pretty much you've been taught almost everything for this whole-- |
|  | 00:43:51 |  |

Transcript #3: Decimals

|  | Timestamp | Text |
| --- | --- | --- |
|  | 00:03 | Tardy! |
|  | 00:03 | I'm not late. I'm not late. |
|  | 00:03 | I'm not late! |
|  | 00:03 | I'm not late. I was here. |
|  | 00:03 | You're only tardy if, after the bell rings. [crosstalk 00:00:04]. |
|  | 00:03 | [crosstalk 00:00:04]. |
|  | 00:03 | I don't have like, the [crosstalk 00:00:04]. |
|  | 00:03 | [crosstalk 00:00:04]. What? (laughs) [crosstalk 00:00:35]. |
|  | 00:03 | Um, can I borrow a pencil? [crosstalk 00:00:41]. |
|  | 00:03 | You've got a pencil in first period? |
|  | 00:03 | [crosstalk 00:00:35] pick a team. |
|  | 00:03 | [crosstalk 00:00:41]. |
|  | 00:03 | No. |
|  | 00:03 | Why? |
|  | 00:03 | (laughs) |
|  | 00:03 | Because I forgot it. And I really [crosstalk 00:00:41]. |
|  | 00:03 | Here! Just go! |
|  | 00:03 | Ew! |
|  | 00:03 | (laughs) |
|  | 00:03 | What are you talking about? |
|  | 00:03 | [crosstalk 00:00:41]. |
|  | 00:03 | You kind of [crosstalk 00:00:41]. |
|  | 00:03 | Sam, do you have a pencil today? |
|  | 00:03 | No. |
|  | 00:03 | Why? |
|  | 00:03 | At home! |
|  | 00:40 | Did you have a pencil in first period? |
|  | 00:41 | Huh? |
|  | 00:48 | Did you have a pencil in first period? How did you work? |
|  | 00:49 | Oh, yeah! [crosstalk 00:01:08]. |
|  | 00:49 | I borrowed one. |
|  | 00:49 | [crosstalk 00:01:08] |
|  | 00:49 | [crosstalk 00:01:08] |
|  | 00:49 | I borrowed one from ... |
|  | 00:49 | why are you guys talking? |
|  | 00:49 | Ouch! I [crosstalk 00:01:08]. |
|  | 00:49 | [crosstalk 00:01:08] |
|  | 00:49 | [crosstalk 00:01:08] back in, in there. |
|  | 01:08 | I don't know. |
|  | 01:16 | [crosstalk 00:01:17] hear about education. |
|  | 01:29 | Here. |
|  | 01:29 | Who are we missing? |
|  | 01:29 | [crosstalk 00:01:34] |
|  | 01:35 | Shanna, uh, just Shanna. |
|  | 01:35 | I know! |
|  | 01:35 | [crosstalk 00:01:41] |
|  | 01:40 | Alright. |
|  | 01:41 | Is that a [crosstalk 00:01:42]? |
|  | 01:41 | [crosstalk 00:01:42]. |
|  | 01:41 | Yeah. Mm-hmm (affirmative). |
|  | 01:49 | So you really think [inaudible 00:01:53]. |
|  | 01:49 | Oh, it's cooking. |
|  | 01:49 | (laughs) |
|  | 01:49 | (laughs) |
|  | 01:49 | (laughs) |
|  | 01:49 | I don't think he called me. |
|  | 01:49 | [inaudible 00:02:02]. |
|  | 01:49 | Oh. |
|  | 02:01 | Turn it into a decimal. |
|  | 02:04 | Which ones are you talking about? |
|  | 02:04 | One through four! |
|  | 02:04 | One through- |
|  | 02:07 | You're doing one through four today. One through four. You gotta turn it into a decimal. Once you turn it into a decimal, you can turn it into a fraction. Or you can use part whole. |
|  | 02:07 | Hmm ... |
|  | 02:17 | Okay. If I- |
|  | 02:44 | Number one, I told you- I told you guys what to do. You turn it into a decimal. From there you can chra- change it to a fraction. If I'm not seeing you guys do the division to turn it into a decimal ... |
|  | 02:44 | [crosstalk 00:02:56] |
|  | 02:56 | ... that means you can care less about what I am saying. |
|  | 02:58 | So you're good? Okay. |
|  | 03:14 | [inaudible 00:03:12] decimal. Add [inaudible 00:03:17]. |
|  | 03:14 | [inaudible 00:03:19] |
|  | 03:14 | And you're ready to go. |
|  | 03:14 | I feel like the six would be ... |
|  | 03:14 | A decimal. |
|  | 03:34 | Do you have that? Is that three divided by eight? |
|  | 03:34 | I guess. |
|  | 03:34 | [crosstalk 00:03:40]. |
|  | 03:34 | [crosstalk 00:03:41]. |
|  | 03:41 | So, three divided by eight. |
|  | 03:41 | [inaudible 00:03:45]. |
|  | 03:41 | You sure? Read it again. |
|  | 03:41 | So, can you do eight [crosstalk 00:03:45]. |
|  | 03:44 | Three. |
|  | 03:46 | 30 [crosstalk 00:03:46]. |
|  | 03:46 | What goes inside that? |
|  | 03:49 | 31. That's six. So,it, it, it, you just keep dropping a zero and try to do eight [inaudible 00:03:53] eight is six. |
|  | 03:52 | Okay. |
|  | 03:52 | And go by eights. |
|  | 03:52 | Just a minute. [inaudible 00:04:13]. |
|  | 03:52 | And eight and six together. [inaudible 00:04:17]. 32. I always like this graph with four, because how many times does four go into four? |
|  | 03:52 | [inaudible 00:04:21] |
|  | 04:20 | I always like to start off at the [inaudible 00:04:21]. So, 48, 56 ... |
|  | 04:20 | [inaudible 00:04:21]. |
|  | 04:20 | [crosstalk 00:04:21]. |
|  | 04:20 | Isaiah, do you know for journal? |
|  | 04:20 | No. You don't have my [inaudible 00:04:21]? |
|  | 04:20 | No. |
|  | 04:20 | 43, 8, 56. So, seven times ... |
|  | 04:20 | Do you remember what color it was? |
|  | 04:20 | Mm-hmm (affirmative). [crosstalk 00:04:21] what happened? |
|  | 04:21 | Okay? Okay. Now, look right there. If he got .37- |
|  | 04:21 | [crosstalk 00:04:22]. |
|  | 04:21 | ... that's out of ... So, how do you turn .37 into a percentage? |
|  | 04:21 | Um ... |
|  | 04:21 | So, what do you do with this decimal and turn it- |
|  | 04:21 | [crosstalk 00:05:11]. |
|  | 05:10 | Which, which way? To right or left? |
|  | 05:10 | (laughs) |
|  | 05:10 | [crosstalk 00:05:15]. |
|  | 05:10 | [crosstalk 00:05:15]. |
|  | 05:10 | (laughs) |
|  | 05:10 | [crosstalk 00:05:17]. Oh, you only move it twice? Once or twice? |
|  | 05:10 | [crosstalk 00:05:18]. |
|  | 05:17 | Okay. So, do you have a problem [crosstalk 00:05:18] like that? |
|  | 05:17 | He got some freaky ... |
|  | 05:17 | (laughs) |
|  | 05:23 | Okay. And the moment you got that first three, you could probably eliminate half of this. |
|  | 05:23 | I'm gonna do ... |
|  | 05:28 | Alright. Always look to kind of what you can eliminate right off the bat. I didn't say answer it! [crosstalk 00:05:37]. |
|  | 05:28 | I don't need to [crosstalk 00:05:37]. |
|  | 05:37 | Gotta bring your decimals over. |
|  | 05:37 | (laughs) |
|  | 05:37 | Because of that, out of 30. So, what numbers did you have with this? [inaudible 00:05:48]? |
|  | 05:37 | [inaudible 00:05:47]. |
|  | 05:49 | [inaudible 00:05:49]. So, right now you got 30. What could we do to that to make it three? |
|  | 05:49 | Maybe [inaudible 00:05:57]. |
|  | 05:57 | What's missing from that number, because right now I see 30? Is that the same number that you have right there? |
|  | 06:03 | How do you write that? |
|  | 06:03 | Mm-mm (negative). |
|  | 06:05 | So, what can you do to that number to make it pretty? |
|  | 06:05 | [crosstalk 00:06:07]. |
|  | 06:06 | Alright. But you're gonna need a zero eventually. What's missing from that? |
|  | 06:17 | Can you write that as a [inaudible 00:06:18]? |
|  | 06:17 | Mm-hmm (affirmative). Um ... |
|  | 06:17 | On a [inaudible 00:06:18]. |
|  | 06:18 | Think, "What can I do to this number ..." |
|  | 06:19 | Show me how you do it with the house. |
|  | 06:19 | [crosstalk 00:06:21]. |
|  | 06:21 | "... to keep it three, without making it any bigger or smaller?" You've gotta give it a decimal point. |
|  | 06:23 | You got it. |
|  | 06:27 | Okay? Because you already started dividing ... |
|  | 06:29 | Okay. |
|  | 06:29 | ... and the next thing you know, your decimals in the wrong place. |
|  | 06:30 | Did I say to multiply for number one, or did I say to divide? |
|  | 06:32 | Remember, always make sure you got that setup. |
|  | 06:32 | Divide! [crosstalk 00:06:35]. |
|  | 06:35 | Show me how you do it. Show me what it would look like. |
|  | 06:35 | I don't remember [crosstalk 00:06:37]. |
|  | 06:37 | Well think, okay, which one goes on the inside, which one goes on the outside? |
|  | 06:39 | You don't remember? |
|  | 06:40 | Just show me how ... Three divided by eight. Show me how that looks like on the paper. |
|  | 06:40 | [crosstalk 00:06:45]. |
|  | 06:45 | Flip it. |
|  | 06:47 | Three. Di- Uh-uh (negative)! |
|  | 06:47 | [crosstalk 00:06:49]. |
|  | 06:49 | The same thing right here. Which number goes on the inside of this? [crosstalk 00:06:51] goes on the outside? |
|  | 06:51 | That's divided by. |
|  | 06:56 | Eight can't go into three. |
|  | 06:58 | Okay. Can you add a decimal maybe and see if it, it, it can go into 30? |
|  | 06:58 | [crosstalk 00:07:01]. |
|  | 07:00 | You guys, we're at a point where there's no reason why you guys cannot remember where the numerator goes in a division problem. |
|  | 07:15 | He will! He will! |
|  | 07:15 | [crosstalk 00:07:19]. |
|  | 07:18 | Okay. So- |
|  | 07:18 | Say it louder Student. |
|  | 07:23 | Top and bottom out. |
|  | 07:24 | So, what [crosstalk 00:07:24], what's eight times three? |
|  | 07:26 | Top and bottom out. |
|  | 07:26 | Eight times three? [crosstalk 00:07:28]. |
|  | 07:26 | It's twenty [crosstalk 00:07:28]. |
|  | 07:28 | Shh! Top and bottom out. What does that mean to you, Student? |
|  | 07:28 | Okay. So, [crosstalk 00:07:29]. |
|  | 07:29 | Top and bottom out. |
|  | 07:30 | I don't know. |
|  | 07:30 | [inaudible 00:07:34]. |
|  | 07:34 | It means the top- |
|  | 07:34 | At the top? |
|  | 07:35 | ... [crosstalk 00:07:35] the top out so that ... |
|  | 07:37 | That's what you wrote. That's what it looks like to me. That's what it means to me. So, do that. |
|  | 07:37 | [crosstalk 00:07:42]. |
|  | 07:37 | [inaudible 00:07:42]. |
|  | 07:42 | Now, [inaudible 00:07:53]. |
|  | 07:42 | [crosstalk 00:07:54]. |
|  | 07:53 | Number one, I, we said top and bottom out. |
|  | 07:56 | [crosstalk 00:07:56] what do you do next? |
|  | 07:57 | Do you even have that written down? |
|  | 07:57 | [crosstalk 00:07:58]. |
|  | 07:57 | You got it! [inaudible 00:07:58]. One step. |
|  | 07:58 | Okay. This one? |
|  | 08:05 | That doesn't hurt. Common, hit me in the head. |
|  | 08:05 | So, what, what ... Finish that. But, finish that. Don't start doing that. Finish that. |
|  | 08:05 | [inaudible 00:08:31]. |
|  | 08:38 | We're gonna get quite a bit of SSI stuff either here or [crosstalk 00:08:41]. |
|  | 08:38 | Stop dying! |
|  | 08:49 | [crosstalk 00:08:42] imperials. I'm assuming you know what it means the day after school. |
|  | 08:49 | [crosstalk 00:08:49]. |
|  | 08:49 | [crosstalk 00:08:49]? I've practiced after school some. |
|  | 08:49 | Because he had just coughed. |
|  | 09:02 | So, you'll just have to fill me in. |
|  | 09:02 | Yeah. |
|  | 09:02 | [inaudible 00:09:03]. |
|  | 09:02 | [inaudible 00:09:03]. |
|  | 09:03 | Can eight go into three? |
|  | 09:03 | So how did you come up with [crosstalk 00:09:05]? |
|  | 09:04 | Four? |
|  | 09:05 | No. We have to add ... |
|  | 09:05 | [crosstalk 00:09:08]. |
|  | 09:05 | Well, good. If it does [crosstalk 00:09:09]. |
|  | 09:08 | ... to make it bigger than a decimal and a ... |
|  | 09:11 | So, that's true of that. How can you convert that to a decimal? What kind of map are the fractions? |
|  | 09:16 | Divide it? |
|  | 09:16 | Well, divide it. Divide it up. |
|  | 09:22 | I don't [inaudible 00:09:23]. |
|  | 09:22 | So, you, so you're saying ... |
|  | 09:22 | [crosstalk 00:09:23] times. |
|  | 09:22 | A decimal and a decimal. [crosstalk 00:09:25]. |
|  | 09:24 | So, three? Well, is it, are you dividing eight by three or three by eight? |
|  | 09:24 | Three by [crosstalk 00:09:30]. |
|  | 09:24 | And what does this say? |
|  | 09:30 | Okay. Write it out. Write it out, long division. |
|  | 09:30 | [crosstalk 00:09:32]. |
|  | 09:31 | Symbol of three. Three divided by eight. So, what goes on the inside? |
|  | 09:33 | So, this is a multi set. What is she starting on? |
|  | 09:33 | What is a [crosstalk 00:09:39]? |
|  | 09:33 | Okay. Write it out. |
|  | 09:42 | Because it's a chapter. [crosstalk 00:09:42] gel. |
|  | 09:43 | Oh, I, I thought you could write it down. [crosstalk 00:09:44] answers. |
|  | 09:44 | And you gotta think, if you don't try, what's your fi- what present chance do you have of getting it right? |
|  | 09:44 | [crosstalk 00:09:50]. |
|  | 09:50 | Well, you're starting off with three, so which ones can you eliminate? |
|  | 09:52 | Gel? |
|  | 09:52 | Gel. [crosstalk 00:09:52]. |
|  | 09:52 | I moved to gel. [crosstalk 00:09:56]. |
|  | 09:55 | So, what number needs to go on the outside? Or on the inside? |
|  | 09:55 | [crosstalk 00:09:59] gel. |
|  | 09:59 | Look at how it's setup. |
|  | 10:05 | It has so much [inaudible 00:10:07]. |
|  | 10:06 | Okay. Now you start doing now, is eight gonna go into three? |
|  | 10:06 | No. |
|  | 10:09 | That means you're gonna get a decimal. So, would suggest putting your decimal in here. |
|  | 10:09 | I was going to kick you off of there! |
|  | 10:09 | Um, how come? |
|  | 10:09 | [crosstalk 00:10:12]. |
|  | 10:09 | And just divide it [crosstalk 00:10:12] and that will get you where you are. That's why you have two. |
|  | 10:09 | Why did you, why did you start from [inaudible 00:10:12]? Can eight go into three? |
|  | 10:09 | [crosstalk 00:10:12]. |
|  | 10:09 | It doesn't, right? You have to put the decimal and then add the zero. So, then the decimal goes here and it's three, it's, it's [inaudible 00:10:12] three [crosstalk 00:10:12]. |
|  | 10:12 | You need to check your math right there. |
|  | 10:12 | Plus ... |
|  | 10:12 | How'd you get that? |
|  | 10:12 | ... that [crosstalk 00:10:30] decimal. |
|  | 10:12 | [crosstalk 00:10:30]. |
|  | 10:29 | Okay. Look what you put down on there and look what you wrote down there. |
|  | 10:29 | So, how do I turn this into a percent? |
|  | 10:29 | Are these two doing the same thing? |
|  | 10:29 | [crosstalk 00:10:56] the decimal which way? How many times? |
|  | 10:29 | [crosstalk 00:11:02]. |
|  | 11:02 | What's being divided, the three or the eight? |
|  | 11:02 | [crosstalk 00:11:04]. |
|  | 11:03 | So, now it's a percentage. So, this is right as it is. |
|  | 11:11 | So, just look at the fraction, three over eight. |
|  | 11:12 | That's correct. |
|  | 11:12 | So, you got three divided by eight parts. |
|  | 11:12 | [crosstalk 00:11:19]. |
|  | 11:12 | Or do you see that? |
|  | 11:12 | Mm-hmm (affirmative). |
|  | 11:12 | Okay. So, the thing about it is they're, is they make a difference. It's really, you can't do those because they're- |
|  | 11:12 | Oh, I thought so, but this, this is a [inaudible 00:11:27] to use 72.8 subtracted that. |
|  | 11:12 | Alright. Hang on. [inaudible 00:11:34]. [crosstalk 00:11:37]. |
|  | 11:12 | [crosstalk 00:11:36]. |
|  | 11:12 | This is the right fraction or BS? |
|  | 11:12 | No. (laughs) |
|  | 11:12 | [inaudible 00:11:45]. |
|  | 11:51 | Okay. So, I, only thing is that, that could be subtracted and you cut it in half. So, right now she poured half the solution. Finally, she put six milliliters. So, what do you do with that and the six mili- milliliters? |
|  | 11:51 | Um, add? |
|  | 12:01 | Okay. If she had that much and she poured six above this, how much was left over? So, is she gonna, is that gonna gain- ge- or ge- Is that gonna increase or decrease? Is she [crosstalk 00:12:11]. |
|  | 12:11 | Do you guys still need more time? |
|  | 12:13 | No. |
|  | 12:13 | No. |
|  | 12:15 | Yep! |
|  | 12:15 | Six here, right here. |
|  | 12:19 | Yeah. Well think about where that six needs to go. |
|  | 12:19 | [inaudible 00:12:21]. |
|  | 12:21 | So, is that six the same as six? No. |
|  | 12:21 | [crosstalk 00:12:26]. |
|  | 12:25 | So, what do you gotta do when you're, when you're adding or subtracting decimals? |
|  | 12:29 | Eight. And then you move it to 30, to where you see 30. So, obviously it can't be this one- |
|  | 12:29 | [crosstalk 00:12:34]. |
|  | 12:29 | ... so it has to be ... |
|  | 12:29 | That's right. |
|  | 12:33 | This one! |
|  | 12:38 | So, you're starting with a decimal. |
|  | 12:38 | [crosstalk 00:12:43]. |
|  | 12:42 | And your answer's gonna start there. So, eight goes into 30. You start there. |
|  | 12:42 | [inaudible 00:12:51]. |
|  | 12:42 | [crosstalk 00:12:53]? |
|  | 12:52 | Ss- say, say, say it again. |
|  | 12:52 | [inaudible 00:12:53]. |
|  | 12:54 | Well, think about it. Okay. If we have 26- if we have 26 dollars and you took and you spent six, are you gonna have two dollars left over? |
|  | 12:54 | [crosstalk 00:13:01]. |
|  | 13:00 | No. |
|  | 13:00 | No. You, you gotta think about it, okay? You had it setup and you just gotta get it [crosstalk 00:13:08]. |
|  | 13:00 | [crosstalk 00:13:08]. |
|  | 13:07 | Hmm? |
|  | 13:07 | [crosstalk 00:13:16]. |
|  | 13:15 | Oh, great! Oh! |
|  | 13:15 | [inaudible 00:13:24]. |
|  | 13:28 | So, how'd you come up with that? |
|  | 13:28 | Because it's the last number. |
|  | 13:28 | [crosstalk 00:13:34]. |
|  | 13:28 | Say it again. |
|  | 13:28 | Because it's the last number. |
|  | 13:28 | What do you mean it's the last number? |
|  | 13:28 | Yeah. |
|  | 13:28 | That? |
|  | 13:28 | [crosstalk 00:13:43]. |
|  | 13:42 | Okay. Well think. When you divide it, though, it doesn't give you a percent, it gives you a decimal. So, once you convert it to decimal then you gotta convert it to a percent. So, I'll, I think you're on the right path with the right numbers, but you gotta, where you gotta convert that number to a percent. |
|  | 13:42 | [inaudible 00:13:55]. |
|  | 13:55 | Alright. Back there what's, what's being divided? The eight or the three? |
|  | 13:55 | The eight, it was, because top and bottom out. |
|  | 14:44 | [crosstalk 00:14:44]. Okay. So, if it's top and bottom out, which one of those has to go on the inside? |
|  | 14:47 | Three. Are you [inaudible 00:14:47]? |
|  | 14:47 | Tell me, bud, which one should go on the inside? |
|  | 14:47 | [crosstalk 00:14:55]. |
|  | 14:56 | Make sure that you ... |
|  | 14:56 | Here. You don't, don't worry about it. [crosstalk 00:14:59] |
|  | 14:59 | ... have them all answered, because at random one of you will have to explain your thinking. |
|  | 14:59 | Which one needs to go on the inside? The three or the ... |
|  | 15:05 | And then we're gonna disagree or agree with your thinking. |
|  | 15:08 | Three? |
|  | 15:10 | The, I tell you, that you divided it correctly, but just this, you always gotta know that the top is being divided by the bottom, so the top needs to go on the inside. Okay? |
|  | 15:10 | [crosstalk 00:15:20]. |
|  | 15:22 | And you notice that you did it kind of backwards and that was an answer choice. |
|  | 15:26 | What do we know? |
|  | 15:27 | Because I guess whoever made this thing, they're counting on somebody making that little error. Okay? |
|  | 15:34 | What are the only things we know at this point? |
|  | 15:34 | [crosstalk 00:15:36] |
|  | 15:34 | Her, her percentage is 35%, right? |
|  | 15:34 | That's why we, we practice it. |
|  | 15:34 | That's the only thing we know. |
|  | 15:36 | You got your setup, you just gotta do the division. |
|  | 15:40 | So, now she's doing batting 20 times so we know that she's gonna hit the ball what percent of ... |
|  | 15:47 | 35. |
|  | 15:48 | Yeah. So, she's gonna hit it 35% of ... |
|  | 15:48 | [inaudible 00:15:50]. |
|  | 15:49 | ... 20. So, you have to find out what ... |
|  | 15:54 | So divide? |
|  | 15:58 | I mean, how do we do it? |
|  | 15:58 | [inaudible 00:16:00]. |
|  | 16:03 | What is your part? What's your part? |
|  | 16:03 | [inaudible 00:16:08]. |
|  | 16:09 | What's your part percent? |
|  | 16:10 | Uh, 35. |
|  | 16:13 | Mm-hmm (affirmative). |
|  | 16:13 | [inaudible 00:16:18]. |
|  | 16:19 | Okay. So, what's your, what's your pull of the me- Okay. And then what are you trying to find? Uh-huh (affirmative). |
|  | 16:19 | [inaudible 00:16:26]. |
|  | 16:19 | Mm-hmm (affirmative). |
|  | 16:19 | Oh! [crosstalk 00:16:26]. |
|  | 16:19 | (laughs) |
|  | 16:19 | Let's see. You got the first thing- |
|  | 16:19 | Mm-hmm (affirmative). |
|  | 16:19 | ... [crosstalk 00:16:26] after that? |
|  | 16:19 | I did it! |
|  | 16:19 | [inaudible 00:16:26]. |
|  | 16:19 | [crosstalk 00:16:26] this stupid thing. |
|  | 16:19 | Okay. So, what do you do with that 53.4? |
|  | 16:19 | [crosstalk 00:16:26]. |
|  | 16:25 | And what- |
|  | 16:25 | [crosstalk 00:17:01]. |
|  | 16:25 | Okay. |
|  | 17:10 | Wait, can you buy one for me [inaudible 00:17:10] it's outside? |
|  | 17:10 | Can we what? |
|  | 17:10 | [crosstalk 00:17:13]. |
|  | 17:10 | Can you still buy them for me [crosstalk 00:17:13]? |
|  | 17:10 | Mom told me you can't have these. |
|  | 17:13 | What's 24 take away 30, or 30 take away 24? |
|  | 17:15 | What? |
|  | 17:15 | Okay. |
|  | 17:15 | Excuse me. |
|  | 17:15 | [inaudible 00:17:24]. |
|  | 17:32 | So, it's 30 minus ... |
|  | 17:32 | [inaudible 00:17:39]. |
|  | 17:42 | Murry. |
|  | 17:42 | [inaudible 00:17:50]. |
|  | 17:42 | [inaudible 00:17:52]? |
|  | 17:42 | [crosstalk 00:17:52]. |
|  | 17:52 | Alright. Put your pencils away. Put your pencils away. I'm gonna give you a red pen. Put your pencils away. |
|  | 18:20 | A red pen? |
|  | 18:27 | Put your pencils away. |
|  | 18:27 | Miss [Teacher - 00:18:28] didn't you ban these? |
|  | 18:27 | I'm gonna give you a red pen. |
|  | 18:27 | [inaudible 00:18:28]. |
|  | 18:27 | [crosstalk 00:18:28]. |
|  | 18:27 | You already got a red pen? |
|  | 18:27 | I already have red pen. (laughs) |
|  | 18:27 | (laughs) |
|  | 18:31 | Alright. |
|  | 18:32 | You're so childish. |
|  | 18:32 | [crosstalk 00:18:37]. |
|  | 18:32 | [crosstalk 00:18:35]. |
|  | 18:37 | You are too. |
|  | 18:38 | How many of you guys had trouble with number one? |
|  | 18:38 | No! You have [crosstalk 00:18:40]. |
|  | 18:38 | [crosstalk 00:18:40]. |
|  | 18:40 | You have no [crosstalk 00:18:42]. |
|  | 18:42 | Raise your hand if you had trouble with number one. |
|  | 18:42 | [crosstalk 00:18:46]. |
|  | 18:45 | Scarlet, number one. What was your confusion? |
|  | 18:52 | Well, uh, first I thought it was three divided by eight. But then- |
|  | 18:57 | It is three divided by eight. |
|  | 18:58 | Well, yeah, but- |
|  | 18:58 | [crosstalk 00:18:59]. |
|  | 18:59 | ... I put three on the outside and eight on the inside. |
|  | 18:59 | So, you mean you thought it was eight. |
|  | 18:59 | [crosstalk 00:19:03]. |
|  | 19:05 | Yes. How many of you guys put three on the outside? |
|  | 19:05 | [crosstalk 00:19:09]. |
|  | 19:08 | (laughs) |
|  | 19:13 | You guys gotta remember that with a fraction, the top number is being divided by whatever is on the bottom, because if I've got 12 over 1, well 12 is being divided by 1 and that still gets me 12. A lot of you guys will miss, were showing that it, thr- three doesn't, or eight doesn't go into three. That's fine. Is every number that we use in math always gonna be a whole number? |
|  | 19:13 | No. |
|  | 19:33 | No. You're gonna get some decimals. |
|  | 19:33 | Yes. |
|  | 19:34 | Okay. We had, um ... this triangle. We have a fraction and when we divide it changes into a decimal and then we multiply by 100 and we can get a percent. Remember? |
|  | 19:34 | Mm-hmm (affirmative). |
|  | 19:58 | We have that. So, I gave you guys a hint and I said, "Divide." That was your hint. |
|  | 19:58 | [crosstalk 00:20:06]. |
|  | 20:06 | But half of you, now, mind you, half of you did do the division, you just did it backwards. |
|  | 20:16 | Oh, yeah. |
|  | 20:16 | Yeah. |
|  | 20:16 | [crosstalk 00:20:17]. |
|  | 20:16 | [crosstalk 00:20:16]. |
|  | 20:16 | Okay? So, Student? |
|  | 20:21 | Si? |
|  | 20:23 | This is something that we cannot forget. This is something we covered like, in September or October. |
|  | 20:32 | Well, [crosstalk 00:20:34]. |
|  | 20:33 | Okay?So, if I am dividing top in ... |
|  | 20:41 | Bottom out. |
|  | 20:42 | ... bottom out. I'm here. Three, eight. Okay. So, how many of you guys had trouble with this division after you figured out the right way?Student, what was your confusion? |
|  | 21:02 | How do I do it. |
|  | 21:04 | You forgot the steps? |
|  | 21:05 | Mm-hmm (affirmative). |
|  | 21:06 | Student, you seemed like you had a hard time too. What was your confusion? |
|  | 21:12 | What he said. |
|  | 21:12 | The steps? Student? |
|  | 21:14 | Um, when I got up to where, wait, where it said ... since I couldn't put eight into three, I get the decimal and then [inaudible 00:21:21]. But then it made me add another zero because I didn't have to add that. I would have to add another decimal just to put that zero down. |
|  | 21:30 | Well, how many numbers can, or how many decimals can a number have? |
|  | 21:32 | One. |
|  | 21:33 | So, once you have that decimal, it's fine right there. You don't have to worry about anything else. |
|  | 21:37 | Okay. Let's go step by step. Can eight go into three? |
|  | 21:42 | No. Put a decimal. |
|  | 21:43 | What is that nu- what does no tell us? Student? Because you lined up your decimal. We don't necessarily need to do that. What does no tell us? |
|  | 21:58 | That we need to make a decimal. |
|  | 22:00 | We need to make a decimal. So, we know that eight can't go into three, so I'm gonna put a decimal here. I'm gonna put a zero, because can it go into three? |
|  | 22:00 | No! |
|  | 22:00 | No. |
|  | 22:00 | No. |
|  | 22:11 | No. And I do my decimal here. |
|  | 22:13 | 30! |
|  | 22:15 | And I get 30. So, now I'm not dealing with three, I'm dealing with 30. So, can eight go into 30? |
|  | 22:25 | Yes! |
|  | 22:26 | Student, how many times? |
|  | 22:26 | Eight? |
|  | 22:26 | [inaudible 00:22:30]. |
|  | 22:26 | Repeat it again. |
|  | 22:26 | [crosstalk 00:22:30] |
|  | 22:26 | How many times? |
|  | 22:30 | [crosstalk 00:22:30] 30. |
|  | 22:30 | What did you put for yours? |
|  | 22:42 | What are [crosstalk 00:22:43]. |
|  | 22:42 | How did you get 24? |
|  | 22:43 | I got, uh, eight times three. [crosstalk 00:22:45]. |
|  | 22:44 | Three. Okay. Eight ... |
|  | 22:44 | Ss- Wait. |
|  | 22:44 | ... times- |
|  | 22:44 | Yeah! |
|  | 22:45 | ... three. Okay. How many of you guys put this three in front of the decimal? Look at your work.  |
|  | 22:45 | [crosstalk 00:22:54]. |
|  | 22:53 | I put it behind! |
|  | 22:53 | Huh? |
|  | 22:53 | I gotta stop doing that. |
|  | 22:55 | I did it a different way. |
|  | 22:56 | You did it ... Student, did you get here? Okay. Here's the deal now. I gave you guys a red pen. I can't grade these because you guys took one, way too long, and we're gonna end up having to go over them. So, what I'm doing here, if you don't have that with your red pen, copy that. I'm gonna give you five seconds to copy that now if you don't have this. Five, four- |
|  | 22:56 | [crosstalk 00:23:25]. |
|  | 23:26 | ... three, two, one. Student said eight times three is 24. Can I add them together? |
|  | 23:38 | No. Subtract out. |
|  | 23:40 | No. Subtract! |
|  | 23:41 | No. I have to subtract. When I subtract, what do I get? |
|  | 23:41 | [crosstalk 00:23:44]. |
|  | 23:43 | Six. |
|  | 23:43 | [crosstalk 00:23:49]. |
|  | 23:48 | Do I need to keep going? |
|  | 23:50 | Yes. |
|  | 23:50 | How do I keep going? |
|  | 23:52 | Go add another, uh, zero. |
|  | 23:53 | I have to add another zero. |
|  | 23:56 | Eight goes into 60, seven times. |
|  | 24:01 | Seven times. And what does that give me? |
|  | 24:05 | Seven times. |
|  | 24:05 | 37. |
|  | 24:05 | No. |
|  | 24:05 | Seven times eight? |
|  | 24:13 | Oh, no! That's 54. |
|  | 24:16 | And then what do I get? |
|  | 24:17 | Oh, no! 56, not 54. |
|  | 24:17 | And then what do I get? |
|  | 24:17 | 40. I mean, four. Four. |
|  | 24:17 | So, Scarlet, [crosstalk 00:24:22]. |
|  | 24:17 | Am I done? |
|  | 24:17 | At this point- |
|  | 24:17 | No! |
|  | 24:17 | No! |
|  | 24:17 | Add another zero! |
|  | 24:17 | What do I need to do here? |
|  | 24:24 | ... can you eliminate any of your answer choices? Look at the number you have up top- |
|  | 24:28 | Well, I got it wrong. |
|  | 24:28 | ... can you eliminate any of your answer choices, just by looking at it? |
|  | 24:30 | How many times does eight go into 40? |
|  | 24:31 | Five! |
|  | 24:31 | [inaudible 00:24:32]. |
|  | 24:32 | Yeah, because they look nothing like that. Okay? |
|  | 24:38 | Oh, now I'm done! Right? |
|  | 24:38 | [crosstalk 00:24:41] |
|  | 24:38 | [crosstalk 00:24:42] |
|  | 24:41 | Okay. When I got this number, .3- |
|  | 24:45 | [crosstalk 00:24:45] it's not done, we're not done yet. |
|  | 24:45 | ... when I got this first number, here ... |
|  | 24:45 | [crosstalk 00:24:49]. |
|  | 24:50 | Is, before I went on to do even any more math, when I got this first number, which one of these could I have eliminated? Obviously whatever the answer is, is gonna start with a ... |
|  | 24:50 | [crosstalk 00:25:01] |
|  | 25:01 | ... what? |
|  | 25:02 | 23 [crosstalk 00:25:03]. |
|  | 25:03 | Three. We know, for sure, without even doing extra work, it's gonna start with a ... |
|  | 25:09 | [crosstalk 00:25:10] right. |
|  | 25:10 | Eight. [crosstalk 00:25:12]. |
|  | 25:12 | So, now I'm here. Yes? |
|  | 25:12 | [inaudible 00:25:14]. |
|  | 25:15 | Okay. Then you keep going. |
|  | 25:15 | [crosstalk 00:25:18]. |
|  | 25:18 | Your triangle said, how do I turn a decimal into a frac- uh, into a percent? What do I need to do? |
|  | 25:18 | [inaudible 00:25:23]. |
|  | 25:23 | You can do triangles. You could- |
|  | 25:23 | Wait [crosstalk 00:25:33]. |
|  | 25:23 | [crosstalk 00:25:32]. |
|  | 25:32 | This is what I have now. |
|  | 25:32 | [crosstalk 00:25:33] decimals too? |
|  | 25:33 | No. |
|  | 25:36 | Three eights is equal to .375. What did that triangle, the triangle that I showed you in your notes. |
|  | 25:45 | Divide. |
|  | 25:45 | You gotta look at your triangle! |
|  | 25:49 | Uh, something about 100. |
|  | 25:49 | Huh? |
|  | 25:49 | [crosstalk 00:25:50]. |
|  | 25:49 | You gotta do something with that number and 100. |
|  | 25:49 | [crosstalk 00:25:54]. |
|  | 25:56 | Don't say anymore words. Stop using words. |
|  | 25:59 | Look at your notes, guys. |
|  | 26:00 | Grab your journals. |
|  | 26:01 | I'm trying! |
|  | 26:02 | Find your triangle and don't use words. Just look at your triangle. I have a decimal, I need to convert it to a percent. |
|  | 26:02 | Oh, [inaudible 00:26:14]. |
|  | 26:14 | Shh! No words. No words. |
|  | 26:20 | Can [crosstalk 00:26:21]. |
|  | 26:21 | So, [crosstalk 00:26:21] a triangle [crosstalk 00:26:21]. |
|  | 26:21 | You're just watching. I just wanna see you guys look at your triangle and process ... |
|  | 26:26 | So, what do you have right there [crosstalk 00:26:26]. |
|  | 26:27 | ... what your triangle says. No words. |
|  | 26:28 | We're following- |
|  | 26:31 | Student! |
|  | 26:31 | ... fraction, decimal [crosstalk 00:26:32]. |
|  | 26:32 | Pull out your triangle. You're gonna be the one to answer. |
|  | 26:35 | Which part? Decimal, fraction, percent? Where would that point be 75 [inaudible 00:26:47]? |
|  | 26:35 | [crosstalk 00:26:47]. |
|  | 26:35 | Oh, yeah. That's a [crosstalk 00:26:47]. |
|  | 26:35 | So, that's a percent? |
|  | 26:35 | Mm-hmm (affirmative). |
|  | 26:35 | It's a decimal. |
|  | 26:35 | [crosstalk 00:26:47]. |
|  | 26:47 | Where, and what do you wanna make it? A fraction, per- or percent? So, what do you do to get from there to there? |
|  | 26:56 | Alright. This is a simple question for everybody. This number, is this in fraction from or decimal form? |
|  | 26:56 | Decimal. |
|  | 27:12 | Decimal! On your triangle, point to where you see you have a decimal or a letter that signifies a decimal. Okay. |
|  | 27:23 | In the division [crosstalk 00:27:24]. |
|  | 27:24 | From a decimal ... |
|  | 27:25 | So, does everybody wanna go fraction or percent? |
|  | 27:25 | ... Student, I wanna get a fraction. I mean a percent. From a decimal I wanna get a percent. Based on the information on your triangle, Student, put your finger on where we are at right now. Everyone else has it. I need to see that you know where we're at. Put it there. Has to be on a corner. |
|  | 27:25 | [crosstalk 00:27:50]. |
|  | 27:51 | What are we, what form are we in right now? What's that number up there? |
|  | 27:55 | Aye, yai, yai! |
|  | 27:57 | Shh! |
|  | 27:57 | [crosstalk 00:28:00]. |
|  | 27:59 | Okay. Now, I wanna go to the other side. What do I need to do? What's on the bottom of the triangle? |
|  | 28:05 | So, you're at a decimal, you wanna get a percent. |
|  | 28:05 | Uh-huh (affirmative). |
|  | 28:05 | [crosstalk 00:28:07] |
|  | 28:07 | So, I'm going from a decimal to percent, what do I need to do? |
|  | 28:13 | Divide. |
|  | 28:13 | Look at your triangle! |
|  | 28:14 | What is it, what was, what does a, what does it do? [crosstalk 00:28:14]. |
|  | 28:14 | [crosstalk 00:28:14]. |
|  | 28:14 | Okay. But you said divide! |
|  | 28:14 | (laughs) |
|  | 28:14 | [crosstalk 00:28:20] |
|  | 28:14 | Multiply by 100%. |
|  | 28:21 | Student, I'm going from a decimal to a percent. What do I need to do based on the information of your triangle? |
|  | 28:21 | [inaudible 00:28:30]. |
|  | 28:30 | Multiply. Does everyone agree that they see a multiply sign? |
|  | 28:36 | What are these? [inaudible 00:28:37] for the [crosstalk 00:28:37]? |
|  | 28:36 | Okay. What do I need to multiply by? |
|  | 28:38 | Uh ... |
|  | 28:41 | What's written on your paper? |
|  | 28:43 | 100. |
|  | 28:43 | 100. So, Student, I need to multiply by 100. Um, what is the easiest way when I'm multiplying by 10 or 100? What can I do when I have a decimal? All I need to do is to what, Scarlet? |
|  | 28:43 | Add! |
|  | 28:57 | Add a zero onto the zero. Or, I mean, [inaudible 00:29:02]. |
|  | 29:02 | If you're thi- if yo- if it's a whole number, that's okay. But you got a decimal. It's just a matter of shifting that decimal. Which direction? So, if you multiply by 100 is the number gonna get bigger or smaller? |
|  | 29:13 | Big. |
|  | 29:14 | Bigger. So, think, where would we move that decimal to make it bigger? To the right or left? |
|  | 29:20 | Which way would I move this decimal to make it bigger? That way or that way? |
|  | 29:26 | That way. |
|  | 29:27 | Which is what direction? |
|  | 29:28 | Uh, right. |
|  | 29:30 | Right. So, I'm gonna move it to the right. Now, if I'm multiplying by 100, how many zeros does 100 have? |
|  | 29:30 | Two. |
|  | 29:30 | Two. |
|  | 29:38 | Two. So, that's how many times I'll move the decimal. One, two. I just multiplied by 100 without having to do this. I just multiplied by 100. This is my answer. |
|  | 29:56 | So ... [crosstalk 00:30:02]. |
|  | 30:01 | I made my life so much easier, because I knew that when I multiply by any number that ends in zero ... If I would have multiplied by 10, I would have moved the decimal one, one place here. If I would have multiplied by a thousand, I would have moved the decimal three places over there. |
|  | 30:01 | [inaudible 00:30:21]. |
|  | 30:22 | So, our answer in percent form is B. |
|  | 30:22 | [inaudible 00:30:29]. |
|  | 30:28 | If you didn't have this, I suggest you copy it. |
|  | 30:35 | I didn't even [inaudible 00:30:39]. |
|  | 30:38 | Alright. |
|  | 30:40 | (laughs) [crosstalk 00:30:42]. |
|  | 30:41 | A scientist had a bottle that contains 56.6 milliliters of solution. She used 3.2 for an experiment, then she poured half of the remaining into a beaker. Finally, she poured 6 milliliters of the solution remaining in the bottles it test of two. How many milliliters of the solution remained? What are we trying to find? |
|  | 30:41 | [crosstalk 00:31:09]- |
|  | 31:09 | Um! |
|  | 31:09 | ... [inaudible 00:31:12]. |
|  | 31:11 | How- how many milliliters remain in the water. |
|  | 31:16 | So, we're trying to find what's left. |
|  | 31:19 | [crosstalk 00:31:19]. Yep. |
|  | 31:20 | Kay. So, there's a few things we're gonna have to do, right? What are we, what are we starting with first? What's left? How many remain? What does that tell us? What do we need to do? |
|  | 31:20 | [crosstalk 00:31:31]. |
|  | 31:31 | Kay. So, we're starting with some. And we're gonna take away, take away, take away. And we're gonna find out what's ... |
|  | 31:37 | Go! |
|  | 31:38 | ... left. What number are we starting with? |
|  | 31:43 | 56.6. |
|  | 31:44 | Okay. Um, Jake from Statefarm. For number two, what did you do first? |
|  | 31:57 | Um ... |
|  | 31:58 | Think about what would happen first in that situation. |
|  | 32:02 | No. Looking at your paper, what did you do first? Tell. It's the very first thing you did. |
|  | 32:02 | Huh? |
|  | 32:02 | [crosstalk 00:32:16]. |
|  | 32:02 | Look over here. |
|  | 32:02 | I subtracted most. |
|  | 32:02 | What did you subtract? |
|  | 32:02 | 56.6 subtract 3.2. |
|  | 32:24 | Okay. So ... Student, what did you do first? |
|  | 32:34 | 56.6 divided by [inaudible 00:32:37]. |
|  | 32:36 | That's not true, Student. |
|  | 32:38 | Yeah. [crosstalk 00:32:39]. |
|  | 32:39 | You did something before that. |
|  | 32:41 | No. |
|  | 32:42 | Yeah, you did. Look at your paper. |
|  | 32:46 | I didn't. I did 56.6 divided by 6. |
|  | 32:50 | Look at your paper. Can- |
|  | 32:56 | I am. I'm looking at it right now. |
|  | 32:56 | What did- |
|  | 32:56 | (laughs) |
|  | 32:56 | (laughs) |
|  | 32:56 | (laughs) |
|  | 32:57 | Before you wrote any of that, what did you do? Look at the problem. What did you do? |
|  | 32:57 | [crosstalk 00:33:01] |
|  | 32:57 | Underline? |
|  | 33:02 | Yes! Go underline the numbers on there that you underlined. That's the ver- She's the only one, or no. She did it too. Go- The very first thing you did was underline. Go do it up there. |
|  | 33:02 | (laughs) |
|  | 33:02 | [crosstalk 00:33:13] |
|  | 33:02 | She just meant how- |
|  | 33:02 | [crosstalk 00:33:16] I'm looking at it right now. |
|  | 33:18 | ... how you kind of organized your information. |
|  | 33:19 | You guys, these are star problems and I need to know how you're thinking. If you're just gonna dive into it or if you're gonna help organize your thoughts. Because if you're not gonna help organize your thoughts, we need to get into the habit of organizing our thoughts so that we are more successful. The chances of us being successful are higher. We need to organize our thoughts. |
|  | 33:43 | [crosstalk 00:33:43] red pen. Cir- circle all the numbers. |
|  | 33:45 | There's a lot of words in there! I got winded reading that problem. |
|  | 33:46 | So, all the numbers that she underlined, circle them. |
|  | 33:49 | We need to know what we're working with. So, yes. A scientist just had a bottle that contained ... |
|  | 33:57 | Okay. Underline the question [crosstalk 00:33:58]. |
|  | 33:57 | This is what we start with. So, I'm starting here. She used 3.2. What am I gonna do with that 3.2? I need a ... |
|  | 34:08 | Subtract it. |
|  | 34:08 | Subtract! |
|  | 34:08 | [crosstalk 00:34:09]. |
|  | 34:09 | So, I know I have to take away ... I'm gonna put a little mine sign. |
|  | 34:13 | [crosstalk 00:34:13] subtract, divide, and multiply. Maybe a little harder, but stay in that sort of, add, subtract environment. |
|  | 34:18 | I'm to take that away. After I do that, she poured half the solution. |
|  | 34:18 | [crosstalk 00:34:28] if there's one, so that means that it's. |
|  | 34:28 | What does half tell me? |
|  | 34:28 | So, this distance right here, there's one in there. |
|  | 34:29 | Divide by two. |
|  | 34:30 | Whatever's left, I have to ... |
|  | 34:30 | Two. |
|  | 34:31 | Divide by two! |
|  | 34:33 | I'm gonna divide by two, whatever's left. |
|  | 34:33 | [crosstalk 00:34:35]. |
|  | 34:35 | Those are harder [crosstalk 00:34:37]. |
|  | 34:37 | And then she poured six out. So, what does poured six tell me? |
|  | 34:40 | Take away. |
|  | 34:40 | [crosstalk 00:34:42]. |
|  | 34:41 | So, I have to take away some more. After I do that, I'm gonna get what? |
|  | 34:51 | Remaining. |
|  | 34:52 | Remaining. |
|  | 34:52 | Remaining. |
|  | 34:52 | I did, I did that [inaudible 00:34:53]. |
|  | 34:53 | I just organized my thoughts. I gave me a starting point. I know from this starting point- |
|  | 34:53 | [crosstalk 00:34:59]. |
|  | 34:53 | Huh? |
|  | 34:53 | [crosstalk 00:34:59]. |
|  | 34:58 | ... I have to take this number away. Whatever I get there, I have to half it, which is divide by two. |
|  | 34:58 | So, [crosstalk 00:35:06] finally [crosstalk 00:35:06]. |
|  | 35:05 | After I get that, then I have to take that away and then I get what's remain. |
|  | 35:09 | [crosstalk 00:35:10] subtract, divide and multiply. |
|  | 35:10 | Now, after I've organized my ideas ... |
|  | 35:13 | You add it here. |
|  | 35:14 | Where do you see add? |
|  | 35:15 | Do I need to bother reading the words all over again? |
|  | 35:15 | [crosstalk 00:35:18]. |
|  | 35:17 | No! |
|  | 35:17 | No. |
|  | 35:17 | no! [crosstalk 00:35:19]. |
|  | 35:18 | I have a game plan now. |
|  | 35:19 | So, what tells you [crosstalk 00:35:20]? |
|  | 35:22 | I have a game plan. So, my game plan says start here, 56.6. |
|  | 35:22 | [crosstalk 00:35:25]. |
|  | 35:24 | Yeah? Okay. She started up with this, and each step, she started losing. [crosstalk 00:35:30]. |
|  | 35:24 | [crosstalk 00:35:29]. |
|  | 35:29 | So, if you don't have it, write it, because we're gonna go through this game plan- |
|  | 35:29 | So, we're gonna [crosstalk 00:35:33]- |
|  | 35:32 | ... because this is the game plan I established. I'm starting here. |
|  | 35:34 | How much does she start off with? |
|  | 35:36 | According on my game plan, now I'm gonna take this away. |
|  | 35:36 | [crosstalk 00:35:38] |
|  | 35:36 | [crosstalk 00:35:38] |
|  | 35:36 | [crosstalk 00:35:38]. |
|  | 35:36 | [crosstalk 00:35:38] |
|  | 35:38 | Okay. Now I go 3.2. |
|  | 35:40 | Flip the, the ... What's the first thing that happened [crosstalk 00:35:43]? |
|  | 35:42 | I have to lineup my decimals. That's four. |
|  | 35:42 | I did. [crosstalk 00:35:46]. |
|  | 35:45 | That's three. |
|  | 35:45 | 53.4. |
|  | 35:48 | 53.4. |
|  | 35:49 | [crosstalk 00:35:49] three. Now add or subtract, divide or multiply? |
|  | 35:50 | Did you guys get here? |
|  | 35:51 | Yes! |
|  | 35:52 | Subtract. |
|  | 35:53 | When you guys did 56.6 minus 3.2, did we get here to 54.4? |
|  | 35:58 | [crosstalk 00:35:58] just so you have it. |
|  | 36:00 | Isaiah, can you copy it down because I don't think you got that. |
|  | 36:02 | Okay. So, do that and see what it gives you. |
|  | 36:05 | Student, if you didn't get there, you need to copy it. Student, if you're not there, you need to copy it. |
|  | 36:05 | We're working on it. |
|  | 36:05 | [crosstalk 00:36:11] |
|  | 36:10 | Okay. So, we got there. So, we did this. |
|  | 36:10 | Okay. So, you got four. Where's your decimal? |
|  | 36:13 | We started here. We took that away. |
|  | 36:13 | The decimal's here. What about ... |
|  | 36:16 | Now we have to half this. |
|  | 36:19 | [crosstalk 00:36:18] 50? |
|  | 36:19 | [crosstalk 00:36:20]. |
|  | 36:19 | We have to divide by two ... |
|  | 36:20 | Yeah, but [crosstalk 00:36:21]. So, that's how much she has left. So, what's the second sequence? |
|  | 36:23 | ... because that's what our game plan says, right? |
|  | 36:23 | Yeah. |
|  | 36:24 | Okay. So, now she divided in half because she poured half of that into, into the can. |
|  | 36:26 | So, now I get to do 53.4, I have to divide by ... |
|  | 36:26 | Two! |
|  | 36:31 | ... two. I'm gonna move my decimal up. |
|  | 36:33 | Okay. So, [crosstalk 00:36:34]. |
|  | 36:33 | [crosstalk 00:36:34]. |
|  | 36:33 | [crosstalk 00:36:35]. |
|  | 36:35 | How many times does two go into five? |
|  | 36:35 | [crosstalk 00:36:36]. |
|  | 36:35 | So, what are you dividing? [crosstalk 00:36:36]. |
|  | 36:35 | Two times two is four. |
|  | 36:35 | Four! |
|  | 36:35 | Four. |
|  | 36:35 | That's one. |
|  | 36:35 | One. |
|  | 36:35 | It goes into there seven times. |
|  | 36:35 | And then a three and then ... |
|  | 36:35 | Let's try six times. |
|  | 36:35 | Yeah. |
|  | 36:35 | [crosstalk 00:36:36] question. |
|  | 36:35 | 12. |
|  | 36:35 | [crosstalk 00:36:36]. |
|  | 36:35 | [crosstalk 00:36:36] and that's seven. |
|  | 36:35 | Now this seven. Okay. So, now I have 26.7. |
|  | 36:36 | [crosstalk 00:36:36] how many times does 2 go into 13. |
|  | 36:36 | [crosstalk 00:37:00]. |
|  | 37:01 | I already finished that. Check. Now, she takes away how much? |
|  | 37:06 | Six! |
|  | 37:06 | Six. |
|  | 37:07 | Oh, that's where I messed up. |
|  | 37:08 | Minus 6.0. I have to lineup my decimals. |
|  | 37:12 | Which is 20.7. |
|  | 37:17 | So, how much remains? |
|  | 37:18 | 20.7! 20 and seven tenths. Or, um, [crosstalk 00:37:21]. |
|  | 37:18 | 20.7. |
|  | 37:26 | I did that. So, my answer's 20.7. |
|  | 37:30 | Okay. So, [crosstalk 00:37:31]- |
|  | 37:30 | I, I did [crosstalk 00:37:31]. |
|  | 37:31 | ... the decimal's here, where is the decimal gonna go there? |
|  | 37:31 | You guys, when you're, when you're doing these problems, it's so easy to get confused. |
|  | 37:31 | [crosstalk 00:37:40]. |
|  | 37:39 | Okay. So, what's your last step we're doing? |
|  | 37:39 | [crosstalk 00:37:40]. |
|  | 37:40 | And if you don't have some type of plan, you're, you're gonna get lost. |
|  | 37:40 | [crosstalk 00:37:47]. |
|  | 37:40 | Okay. |
|  | 37:46 | Like, you need to be able to read the problem and understand what it's asking you to do, come up with a plan, and then execute that plan. |
|  | 37:53 | Okay. So, what's the last thing that happened here? |
|  | 37:57 | You need to have some process. |
|  | 37:59 | Um, I added instead of subtracted in the end. |
|  | 38:03 | Subtract. |
|  | 38:03 | So, what are you gonna subtract? |
|  | 38:05 | Why did you add it in the end? |
|  | 38:07 | Uh, because, because it says she poured it and I thought she like, added more. |
|  | 38:07 | Well, okay. So, are you subtracting six or .6? |
|  | 38:15 | Oh! You thought she added more into- |
|  | 38:15 | [crosstalk 00:38:16]. |
|  | 38:16 | .6. |
|  | 38:17 | Okay. |
|  | 38:17 | Where are you seeing .6? |
|  | 38:17 | Hey! Gimme my gel pen. |
|  | 38:17 | [crosstalk 00:38:21] |
|  | 38:22 | So, that's six. It is a ones, ten or tens, one? |
|  | 38:22 | [crosstalk 00:38:26] |
|  | 38:25 | So, did anyone get this? 20.7. |
|  | 38:25 | [crosstalk 00:38:28]. Okay. You gotta lineup your decimals. |
|  | 38:27 | Student? Alright. (laughs) |
|  | 38:28 | Give it to me! |
|  | 38:31 | You guys, Student got it? She's the only one that underlined stuff. What does that tell you? |
|  | 38:37 | She's smart! |
|  | 38:41 | No, [crosstalk 00:38:42] do. (laughs) |
|  | 38:41 | She doesn't [crosstalk 00:38:42]. |
|  | 38:41 | Okay. So, think about what you do. You added, divide- Are you subtracting or are you dividing? |
|  | 38:42 | Gimme my gel pen! |
|  | 38:42 | She doesn't know how to do the, do ... |
|  | 38:43 | Is that any crazy math you've never done before? But it's a lot of information. So, think about it. It took us [crosstalk 00:38:49]. |
|  | 38:43 | Give me my pen. |
|  | 38:43 | That's really not bad. |
|  | 38:43 | Number three! |
|  | 38:43 | What? [crosstalk 00:38:55]. |
|  | 38:43 | Wha- what? |
|  | 38:54 | And I'm guessing we get it in five. Five seconds, three minutes. |
|  | 39:00 | Firefighter uses equipment that weighs 60 pounds. |
|  | 39:01 | But would you rather get it wrong, right in three minutes, or wrong in five seconds? |
|  | 39:01 | [crosstalk 00:39:02]. |
|  | 39:01 | [crosstalk 00:39:03]. |
|  | 39:03 | The firefighter weighs X pounds, which equation can be used to find the total weight of both the firefighter and his equipment? Before we do anything, what are we looking for? |
|  | 39:15 | Total! |
|  | 39:15 | Crystal! What are we looking for? |
|  | 39:18 | Uh, we're looking for the [inaudible 00:39:23]. |
|  | 39:18 | [crosstalk 00:39:25] |
|  | 39:18 | What? |
|  | 39:18 | [inaudible 00:39:28]. |
|  | 39:30 | I know, but what are we looking for? |
|  | 39:30 | [crosstalk 00:39:33] |
|  | 39:30 | [crosstalk 00:39:33] |
|  | 39:33 | Wait! Let her talk. |
|  | 39:33 | [inaudible 00:39:35]. |
|  | 39:38 | More basic than that, Jake, what are we looking for? |
|  | 39:40 | We're trying to find the T. |
|  | 39:42 | The T, which is the ... |
|  | 39:43 | Weight of both [crosstalk 00:39:44]. |
|  | 39:44 | Total! |
|  | 39:44 | The total. |
|  | 39:45 | Oh. |
|  | 39:46 | What does total mean to you? |
|  | 39:46 | [crosstalk 00:39:51] that should happen, er, in a problem. |
|  | 39:52 | Total means addition. Total means sum. Is there something here that's not showing us somewhere addition? |
|  | 40:01 | Then couldn't you automatically wipe off C and D? |
|  | 40:01 | Huh? |
|  | 40:01 | Couldn't you automatically wipe off C and D, because [inaudible 00:40:08]. |
|  | 40:08 | Yep. Because is it, is anything being summed there? |
|  | 40:10 | No. |
|  | 40:10 | No! |
|  | 40:10 | So, you're correct. I would get rid of these two because we're looking for a sum. We're looking for a combination. |
|  | 40:18 | Mm-hmm (affirmative). So, what is [crosstalk 00:40:19]. |
|  | 40:18 | I [crosstalk 00:40:20]. |
|  | 40:19 | That's no combination! |
|  | 40:20 | Because X plus six equals [crosstalk 00:40:22]. |
|  | 40:22 | Okay. So, Student, you said total is the answer to an addition problem, yes? |
|  | 40:27 | Wait. Which ones did you cross out? |
|  | 40:29 | C and D. |
|  | 40:29 | [crosstalk 00:40:30]. |
|  | 40:30 | So, T ... |
|  | 40:30 | [crosstalk 00:40:31]. |
|  | 40:31 | [crosstalk 00:40:31] it's like [crosstalk 00:40:31] what's the process. Okay? |
|  | 40:33 | Uh, T is my answer to some type of addition problem. |
|  | 40:37 | So, it's [crosstalk 00:40:38]. |
|  | 40:38 | What am I adding? |
|  | 40:39 | Okay. Alright. We'll [crosstalk 00:40:39]. |
|  | 40:39 | X plus six [crosstalk 00:40:39]. |
|  | 40:39 | X plus six, so, wouldn't you just take away 80? |
|  | 40:42 | Let's say I'm a fir- uh, say I'm a firefighter. [inaudible 00:40:45] [crosstalk 00:40:46]. |
|  | 40:46 | He, the equipment weighs 60 pounds. The firefighter weighs X. I'm trying to find the total of them both. |
|  | 40:46 | That weighs 60 pounds. If they wanna know the weight of me, the firefighter, and our, our equipment weighs- |
|  | 40:51 | Total tells me add. Yes, Student? |
|  | 40:54 | ... am I gonna multiply those? Am I gonna add those? Am I gonna subtract them? [crosstalk 00:40:56]. |
|  | 40:55 | Um, I thought it [crosstalk 00:40:58]- |
|  | 40:57 | Oh, I got it right? Right. |
|  | 40:58 | ... 60 pound [crosstalk 00:40:58]. |
|  | 40:58 | Well, think about it. If I just want the tools ... Me, my weight, and the equip- You just add them, okay? It's not asking you to just ... |
|  | 40:58 | Well ... |
|  | 41:06 | It's just really looking for what's the most logical, guys. Okay? |
|  | 41:08 | ... if the firefighter weighs 60- Okay. The equipment weighs 60 pounds and let's say the firefighter weighs 100 pounds, what's 100 times 60? |
|  | 41:19 | Uh ... |
|  | 41:19 | 600? |
|  | 41:21 | 6,000? |
|  | 41:23 | Yeah! Actually, this is way too much. |
|  | 41:25 | Do you know anybody that weights 6,000- (laughs) I don't know anyone that weighs [crosstalk 00:41:31]. |
|  | 41:30 | (laughs) |
|  | 41:30 | [crosstalk 00:41:31] |
|  | 41:30 | They would be dead! |
|  | 41:32 | Hey, guys, just envision that real life situation. |
|  | 41:35 | [crosstalk 00:41:36] 600. |
|  | 41:36 | A firefighter has his or her equipment. |
|  | 41:38 | [crosstalk 00:41:39]. That's 60. |
|  | 41:39 | It weights 60 pounds. |
|  | 41:39 | [crosstalk 00:41:41] |
|  | 41:41 | It's asking, "Well, how could you figure out what the firefighter and the equipment weight together?" Is there any need- |
|  | 41:41 | [crosstalk 00:41:46]. |
|  | 41:47 | ... to multiply those two? |
|  | 41:48 | No. |
|  | 41:48 | No. [crosstalk 00:41:48]. |
|  | 41:48 | That would- |
|  | 41:48 | You're not gonna- because when you're doing that, you're multiplying the 60 pound, the six, the 60 pounds of equipment, you're multiplying that times each pound that the firefighter weighs. That's in ... |
|  | 41:48 | [crosstalk 00:42:02] |
|  | 42:03 | No way! |
|  | 42:03 | [crosstalk 00:42:04] |
|  | 42:03 | Maybe he ate too much! |
|  | 42:03 | [crosstalk 00:42:05] |
|  | 42:04 | It was here. Student! |
|  | 42:06 | [crosstalk 00:42:07] (laughs) |
|  | 42:07 | Total of both. This was telling us we're gonna combine this weight and this weight and to do that we're gonna add. |
|  | 42:07 | [crosstalk 00:42:14]. |
|  | 42:07 | [crosstalk 00:42:15]. |
|  | 42:15 | This would have been our answer. |
|  | 42:16 | Okay. |
|  | 42:17 | But even ... |
|  | 42:17 | Wait. So- |
|  | 42:18 | Even just knowing that total means add, we could have eliminated these two. We would have given ourself a 50/50 chance. |
|  | 42:27 | Yeah. |
|  | 42:27 | Even if we would have said, "Oh, well what if the firefighter weighs," you know, "10 pounds." We could have put that in there. Oh, he can't weigh 600 or ... |
|  | 42:35 | Oh! |
|  | 42:35 | [crosstalk 00:42:36]. |
|  | 42:35 | So, B is the answer? |
|  | 42:37 | Yes, sir. |
|  | 42:37 | Okay. I guessed on my own and I got it right. |
|  | 42:37 | Yay! |
|  | 42:37 | (singing) |
|  | 42:38 | Got it wrong? |
|  | 42:45 | Yeah. [crosstalk 00:42:50] |
|  | 42:45 | What was the answer? |
|  | 42:45 | B. |
|  | 42:45 | B! |
|  | 42:45 | I guessed my answer. [crosstalk 00:42:51] right. |
|  | 42:45 | No you didn't. [crosstalk 00:42:53]. |
|  | 42:52 | We gotta go through this one fast. The last time she played softball, she hit the ball 35% of the time she was at bat. Based on this information, how many times will she hit it if she bats 20 times? Scarlet, what is this information? Well, what do wha- what do eh- what is it asking? |
|  | 43:11 | Um ... |
|  | 43:11 | What do I need to find? |
|  | 43:11 | [crosstalk 00:43:13] |
|  | 43:12 | How many times will that person's name hit the ball and the next time she plays softball, if she hits it 20 times. |
|  | 43:24 | So, what am I working with at this point? |
|  | 43:24 | [crosstalk 00:43:26] |
|  | 43:26 | What do I know? |
|  | 43:27 | 20 and 35%. |
|  | 43:28 | Okay. So, what do I know right now having ... What does a 35% tell me? |
|  | 43:35 | You're gonna have to multiply to know it [crosstalk 00:43:36]. I am not asking you. |
|  | 43:36 | Sorry. (laughs) |
|  | 43:40 | That is one way to do it. I need to find- |
|  | 43:40 | [crosstalk 00:43:45]. |
|  | 43:44 | ... 35% of ... |
|  | 43:46 | 20! |
|  | 43:47 | 20. |
|  | 43:48 | 20. |
|  | 43:49 | So, I'm looking for 35% of 20, yes? |
|  | 43:49 | [crosstalk 00:43:56]. |
|  | 43:49 | What does of tell me? |
|  | 43:49 | [crosstalk 00:43:56] 30 something. |
|  | 43:49 | [crosstalk 00:43:57] er, uh ... |
|  | 44:01 | What does, what does the keyword of tell me? What ... |
|  | 44:01 | Multiplication. |
|  | 44:05 | Multiplication. So, I can just do this. 35 times 20. |
|  | 44:10 | Yeah. Uh ... [crosstalk 00:44:11]. |
|  | 44:10 | Can I do that? |
|  | 44:10 | 700! |
|  | 44:10 | Yes. |
|  | 44:15 | Have you guys ever been able to multiply, ply a percent? |
|  | 44:15 | [crosstalk 00:44:19]. |
|  | 44:18 | What do you gotta do to the percent first? |
|  | 44:20 | What do you have to do to the percent? |
|  | 44:21 | Oh! |
|  | 44:21 | [crosstalk 00:44:22] |
|  | 44:21 | Takeaway the ... |
|  | 44:21 | [crosstalk 00:44:22]. |
|  | 44:22 | Um ... |
|  | 44:23 | How do I make it into a decimal? |
|  | 44:25 | You put ... |
|  | 44:28 | Move it? Which way? |
|  | 44:29 | You bring it to the front. |
|  | 44:29 | Front. |
|  | 44:31 | Mm-hmm (affirmative). Twice. One, two. So, now can I do this? .35 times 20? |
|  | 44:40 | Yes. |
|  | 44:40 | Move the dot. |
|  | 44:41 | Okay. That's one way to do it. Student, what was the other way? What did you do? |
|  | 44:45 | I just put 35 times 20. I go, I didn't even bother. |
|  | 44:49 | Who set up the proportion? Someone set up a proportion. What did you do? |
|  | 44:53 | I multiplied 35 times 20. |
|  | 44:57 | I just put it [crosstalk 00:44:59]. |
|  | 44:58 | [crosstalk 00:44:59] different. |
|  | 44:58 | [crosstalk 00:44:59] |
|  | 44:59 | Ew! |
|  | 45:01 | Part! |
|  | 45:02 | Yeah. [crosstalk 00:45:02] That's what I did. Yes. |
|  | 45:04 | Whole. |
|  | 45:04 | (laughs) |
|  | 45:04 | [crosstalk 00:45:07] |
|  | 45:07 | Whole. Part. |
|  | 45:08 | Look at the poster we have at the back of the room! |
|  | 45:08 | [crosstalk 00:45:10] |
|  | 45:11 | It's been up there all year long. That should be your best friend when it comes to percent. |
|  | 45:15 | Yes! |
|  | 45:15 | (laughs) |
|  | 45:15 | Even my eight graders use that. |
|  | 45:16 | These have number one or number two? |
|  | 45:16 | Okay? |
|  | 45:18 | So look it. I'm gonna show you this really quick. This 35 divided by 100, that's, that right there. That's us moving the decimal over two times. |
|  | 45:18 | [crosstalk 00:45:27] |
|  | 45:26 | Oh. |
|  | 45:26 | [crosstalk 00:45:27]. |
|  | 45:27 | Then we multiply times 20. So, what did we get? |
|  | 45:29 | Um ... |
|  | 45:32 | Student, what, what, what were your numbers here? |
|  | 45:33 | Huh? |
|  | 45:35 | What were your numbers here? |
|  | 45:35 | When you multiply .352. |
|  | 45:35 | 700. |
|  | 45:35 | 700? |
|  | 45:35 | Yeah. |
|  | 45:41 | And then, I add two decimal spaces. |
|  | 45:44 | Yes! |
|  | 45:45 | So, what is your answer? |
|  | 45:45 | Seven. |
|  | 45:45 | B! |
|  | 45:45 | And B. |
|  | 45:49 | Seven times. |
|  | 45:49 | [crosstalk 00:45:50]. |
|  | 45:50 | I did it! Yay! |
|  | 45:50 | [crosstalk 00:45:52]. |
|  | 45:53 | Put them away. |
|  | 45:56 | Man! This took us all period? |
|  | 45:58 | Messy. Uh-uh (negative). |
|  | 46:02 | (laughs) |
|  | 46:02 | It didn't. |
|  | 46:02 | Thank God! |
|  | 46:05 | Isaiah! |
|  | 46:05 | [crosstalk 00:46:05] |
|  | 46:05 | But, I swear, it's like this every day that- |
|  | 46:07 | You talking too! |
|  | 46:07 | Uh-uh (negative). [crosstalk 00:46:09]. |
|  | 46:09 | So, we're not gonna have time ... |
|  | 46:09 | [crosstalk 00:46:09] |
|  | 46:09 | Oh, my God! |
|  | 46:09 | Listen! |
|  | 46:09 | Hay, niño! |
|  | 46:09 | Yeah. But you say all [crosstalk 00:46:15]. |
|  | 46:09 | Shh! Guys! |
|  | 46:15 | We're not gonna have time to get into our equation review, because this took so long. |
|  | 46:21 | Well, they had to ... |
|  | 46:21 | But- |
|  | 46:23 | I had to know about that [crosstalk 00:46:24] for this one. |
|  | 46:24 | ... you guys, we're gonna start Star Prep here. Um ... |
|  | 46:28 | Oh, why is User Prep in our first class? |
|  | 46:30 | ... in a couple of days. I wanted to start it Wednesday. We might have to start it Thursday. |
|  | 46:37 | I won't be here Thursday. |
|  | 46:39 | So, we're gonna have to do like a three minute review on equations because you guys are gonna post test. |
|  | 46:45 | We gotta do- |
|  | 46:46 | So, let's talk about equations. What is the key? |
|  | 46:46 | [crosstalk 00:46:51] |
|  | 46:46 | [crosstalk 00:46:53] |
|  | 46:46 | [crosstalk 00:46:53]. |
|  | 46:56 | (laughs) So, what do we do with the red pens? |
|  | 46:58 | What is the key? Why do you ... You're done with this so that's [crosstalk 00:47:00]. |
|  | 46:59 | This is my grade. You do [crosstalk 00:47:00]. |
|  | 46:59 | I'm too cozy. |
|  | 47:08 | If I have an equation ... Five plus X equals 10. |
|  | 47:08 | [crosstalk 00:47:13] |
|  | 47:08 | Shh! |
|  | 47:16 | Five plus X equals 10 so that's, uh ... |
|  | 47:18 | What do I need to do? |
|  | 47:19 | You- |
|  | 47:20 | You can [crosstalk 00:47:21]. |
|  | 47:21 | Student, I breaded my hair. |
|  | 47:21 | That's [crosstalk 00:47:22]. |
|  | 47:22 | I have to do what? I- I always have to be looking for the what operation? |
|  | 47:25 | Huh? |
|  | 47:25 | Do you have a bobby pin? |
|  | 47:26 | Addition! |
|  | 47:29 | [crosstalk 00:47:29]. Oh! |
|  | 47:29 | (laughs) |
|  | 47:29 | I don't know. |
|  | 47:32 | Quiet yourselves right now. |
|  | 47:34 | (laughs) |
|  | 47:35 | Pull out ... |
|  | 47:36 | Was that an avocado? |
|  | 47:36 | [crosstalk 00:47:48] |
|  | 47:36 | No. It's a cheeseburger. |
|  | 47:36 | Oh, thanks! |
|  | 47:36 | No. That's a [crosstalk 00:47:48]. |
|  | 47:36 | It's an avocado. |
|  | 47:36 | [crosstalk 00:47:51]. |
|  | 47:54 | Oh, thanks. It's just an avocado. Thanks. |
|  | 47:54 | [crosstalk 00:47:54]. |
|  | 47:54 | [crosstalk 00:47:58]. |
|  | 47:57 | There's a paper that we did ... |
|  | 47:59 | I just took his avocado. Why take it when other peoples [crosstalk 00:48:02]. |
|  | 48:01 | This one. |
|  | 48:01 | [crosstalk 00:48:02] |
|  | 48:01 | It broke. |
|  | 48:04 | Open your journal to this one right now. |
|  | 48:05 | Yeah. [crosstalk 00:48:06]. |
|  | 48:06 | My thing broke. |
|  | 48:06 | [crosstalk 00:48:08] |
|  | 48:08 | What? Which one? |
|  | 48:08 | We have two minutes. |
|  | 48:09 | Blank. |
|  | 48:09 | You better hurry. |
|  | 48:10 | I, I don't remember. Oh! [crosstalk 00:48:12]. |
|  | 48:10 | [crosstalk 00:48:12]. |
|  | 48:12 | Oh, this one? |
|  | 48:14 | What? |
|  | 48:15 | Yeah. |
|  | 48:15 | The mean, median, mode, and range? |
|  | 48:16 | Now ... no. |
|  | 48:16 | [crosstalk 00:48:18]? |
|  | 48:17 | Yes. |
|  | 48:20 | Oh. |
|  | 48:20 | What the- |
|  | 48:20 | Quietly to yourself, the first two bullet points, read them. I don't want you to say anything, just read them in your head. |
|  | 48:26 | I don't know what I wrote. |
|  | 48:28 | Oh! |
|  | 48:28 | (laughs) [crosstalk 00:48:29]. |
|  | 48:28 | The first two bullet points. Just read them in your head. |
|  | 48:32 | Oh, yeah. I [inaudible 00:48:38]. |
|  | 48:38 | There is a key to solving these equations and it's underlined in boldface. And it's not in your writing. It's in typed writing. |
|  | 48:38 | [inaudible 00:48:53]. |
|  | 48:52 | Do you think you know what word I'm talking about? |
|  | 48:55 | This one? [crosstalk 00:49:00]. |
|  | 48:55 | [crosstalk 00:49:00]. |
|  | 48:55 | Okay. |
|  | 48:55 | Mm-hmm (affirmative). |
|  | 49:05 | What's that? |
|  | 49:13 | Inverse operation. |
|  | 49:19 | What's inverse operations? |
|  | 49:19 | Uh ... |
|  | 49:20 | Student, what does it mean to do inverse operations? |
|  | 49:20 | Underline, I think. |
|  | 49:20 | Think of the term inverse. It sounds a lot like another word. |
|  | 49:20 | Student, what is inverse operations mean? |
|  | 49:20 | Oh! So, you're just ... oh. |
|  | 49:21 | Undo! |
|  | 49:22 | Undo. And how do we undo? That's a good word. Student, how do we undo? |
|  | 49:27 | Like, the reverse of addition and subtraction? |
|  | 49:31 | Yes. |
|  | 49:31 | It's the opposite. |
|  | 49:31 | So, [crosstalk 00:49:32]. |
|  | 49:31 | [crosstalk 00:49:32]. |
|  | 49:33 | Thank you, Student. You're my brain now. |
|  | 49:34 | We have to do the opposite. |
|  | 49:36 | I'm being sarcastic. |
|  | 49:39 | So, on here ... |
|  | 49:39 | [crosstalk 00:49:41]. |
|  | 49:41 | ... what is the opposite of what's going on here? |
|  | 49:41 | [crosstalk 00:49:45]. |
|  | 49:46 | What's happening between the five and the X? |
|  | 49:46 | [crosstalk 00:49:49]. |
|  | 49:46 | Adding. |
|  | 49:50 | Adding. So, what's the opposite or inverse of adding? |
|  | 49:50 | Subtracting! |
|  | 49:53 | Subtracting. |
|  | 49:53 | Subtract. Do I wanna subtract the X? |
|  | 49:53 | No! |
|  | 49:53 | [crosstalk 00:49:56]. |
|  | 49:56 | No. I have to subtract the- |
|  | 49:57 | Put the 10! |
|  | 49:57 | [crosstalk 00:49:58]. |
|  | 49:59 | I have to subtract the ... |
|  | 49:59 | Five. |
|  | 50:00 | ... five! |
|  | 50:01 | Oh. |
|  | 50:01 | Wanna do my train track? |
|  | 50:05 | Think of, think of the pennies. You take away five pennies ... |
|  | 50:06 | I'm gonna take away the five pennies. I'm gonna take away the five pennies. |
|  | 50:06 | [crosstalk 00:50:07]. |
|  | 50:06 | [crosstalk 00:50:07]. |
|  | 50:06 | 10 take away five is ... |
|  | 50:06 | Five. |
|  | 50:11 | Five! |
|  | 50:12 | Five. |
|  | 50:12 | [crosstalk 00:50:12]. |
|  | 50:12 | X equals five. We're not done! If it was minus, what would I do? |
|  | 50:12 | [crosstalk 00:50:24]. |
|  | 50:12 | Add! |
|  | 50:12 | Add! |
|  | 50:26 | If it was multiply, what would I do? |
|  | 50:26 | Division! |
|  | 50:26 | If it was division, what would I do? |
|  | 50:26 | Multiply! |
|  | 50:26 | Multiplication! [crosstalk 00:50:30] |
|  | 50:26 | Multiply! |
|  | 50:26 | The key to solving one step equations is ... |
|  | 50:26 | Um, um ... |
|  | 50:31 | ... inverse operations. |
|  | 50:33 | Operations! |
|  | 50:33 | [crosstalk 00:50:33]. |
|  | 50:33 | [crosstalk 00:50:33]. |
|  | 50:33 | [crosstalk 00:50:33] take this out in the hall. |
|  | 50:33 | (laughs) |
|  | 50:33 | Alright. Guys! [crosstalk 00:50:38] |

Transcript #4: Finding the base of a triangle

| Speaker | Timestamp | Text |
| --- | --- | --- |
| Teacher: | 00:00:06 | As I am looking around I should see you guys working on the half sheet or at least getting ready for working on a half sheet. |
| Teacher: | 00:00:37 | You don't get those without permission. No. [crosstalk 00:00:35] Only on the ones I told you to do. |
| Teacher: | 00:00:55 | Okay. Right here, just these two problems on area of a parallelogram. This is going to be changed to a ticket in the door. |
| Teacher: | 00:00:55 | You guys can, maybe, use these calculators next year. [crosstalk 00:02:29] |
| Teacher: | 00:03:46 | So, I see that some of you are putting just the answer down. Do you remember what I want? There's three ... Well, there's a couple of things. I want you to give me what the base is, what the height is, and your formula. And, when you plug in the numbers and then the answer. So, if you don't have that written down, go back and write it in. Sometimes you will have other problems that are expanded and [inaudible 00:04:26] |
| student: | 00:03:46 | [inaudible 00:04:35] |
| Teacher: | 00:05:05 | Alright, so right here. It turned out that this parallelogram and this rectangle have the same what? |
| student: | 00:05:14 | Area. |
| Teacher: | 00:05:17 | Same area. They have the same area. They have the same base. They have the same height. Here's the base and here's the height, like this, and how do I know if this is the height and not the 4 and a half? How do I know that 3 is the height and not the 4 and a half? |
| student: | 00:05:40 | Because. |
| Teacher: | 00:05:42 | Because? That's a good answer. Why? |
| student: | 00:05:48 | Because of the line in the middle. |
| Teacher: | 00:05:49 | Because of the line in the middle, this one? |
| student: | 00:05:50 | Yeah. |
| Teacher: | 00:05:51 | What's so special about that one? |
| student: | 00:05:52 | Because it shows the height. |
| Teacher: | 00:05:57 | But how do I know that's the height? What is the thing we look for? Yes? |
| student: | 00:06:00 | Because it has right angles. |
| Teacher: | 00:06:02 | It makes right angles, they didn't show this to us, but it's supposedly makes a right angle right here. We are going to assume that in this picture. It's always between the two opposite parallel sides. Then over here, same thing, but it's easier to tell on the rectangle. You should have said 6 for the base, 3 for the height, that means 6 times 3 ... Thank you Student. That's 18 what, because some of you just had 18. 18 what? Student? |
| Student | 00:06:34 | Feet squared. |
| Teacher: | 00:06:35 | Feet squared. Feet to the power of 2, right there. Okay, questions on that? Then the diagram below shows a parallelogram and it's dimensions. Which equation shows the area of the parallelogram? What do you guys think? Yes, Student? |
| Student: | 00:07:03 | E. |
| Teacher: | 00:07:03 | E? This times this? Yes. So, this is a rectangle and this is a parallelogram and they use the same formula as long as you know the base and the height and you are good. What did we do last Friday? Does anybody remember what I did to the parallelogram or to the rectangle? What did I do? Divide them by 2? How do I show dividing by 2 on the picture? |
| Student: | 00:07:29 | A line [inaudible 00:07:30] |
| Teacher: | 00:07:29 | A line through where, Student? |
| Student: | 00:07:30 | Under the a before BH and write a 2 under the line. |
| Teacher: | 00:07:37 | Okay, so, Student is saying that on the formula, for the area of a triangle, I'll take the base and the height and put a line under it and then put a 2 under that. What does that mean? What does that line mean? Yes, Student? |
| Student: | 00:07:37 | Divide. |
| Teacher: | 00:07:54 | Divide, and what does the 2 mean? |
| Student: | 00:07:55 | By 2. |
| Teacher: | 00:07:57 | Divide by 2. Okay, how do I show that on my picture? Say that again Student. |
| Student | 00:08:05 | Some of these people draw a line [inaudible 00:08:07] |
| Teacher: | 00:08:09 | Okay, so let me see. If I have a rectangle ... Thank you, there's papers up there at the front. Do I do a line this way? That's cutting it in half. Is that it to make triangles? |
| student: | 00:08:27 | No. |
| Teacher: | 00:08:27 | No, corner to corner. Let me do it over here. Like this? Oh! I forgot guys, sorry. Could I do it like this? Like that on, oops you can't see it, right there? Now I have 2 triangles. What happened to this area of 18? |
| student: | 00:08:49 | It got cut in half. |
| Teacher: | 00:08:53 | It got cut in half. What number should I put for the area of this top triangle? |
| student: | 00:08:53 | 9. |
| Teacher: | 00:08:59 | 9? And for this one? |
| student: | 00:08:59 | 9. |
| Teacher: | 00:09:01 | Because they are exactly the same size, they're congruent? And this one? |
| student: | 00:09:08 | 9. |
| Teacher: | 00:09:09 | 9? 9 because direct models are the same size. Basically what we said was that for the area of a triangle we took the area of a rectangle and divided it by 2. We cut it in half. That's the logic I want you to follow instead of memorizing formula but now we are going to work that formula backwards. Let's practice. Turn this around real quick. Turn this around to the back. By the way be sure that your name is on here because you are going to turn it in before you leave and today's date is, I guess I should put it on there, 3/5/18, that's today's date. Draw yourself any triangle, however you want it to look, ... Yes. Make yourself a triangle. I'm going to make one that looks like this, this time. I haven't made one like this in a while. |
| student: | 00:10:07 | On the back? |
| Teacher: | 00:10:07 | On the back. On the back of this one. Now, pick yourself a base and then the height we are going to say is right here. It makes a right angle with the base so that's your height. Pick a number. Pick two numbers, your two favorite numbers and it doesn't have to be like your neighbor's. Make your own triangle with your own base and your own height. And then I want you to find it's area. |
| student: | 00:10:07 | [inaudible 00:10:36] |
| Teacher: | 00:10:36 | Alright, but you are going to have to multiply them, remember that. Okay? |
| student: | 00:10:39 | Lot's of zeroes. |
| Teacher: | 00:10:41 | And then you are going to do base times height. I wrote these backwards didn't I? Base times height divided by two. Does it matter what order I multiply them in, really? Does it? When I multiply numbers does it matter? |
| student: | 00:10:56 | No. |
| Teacher: | 00:10:56 | No, but the formula looks like this, so this is what we are going to do. Solve it for your triangle and then have your neighbor check it. |
| student: | 00:11:03 | Where? How would I put the height? |
| Teacher: | 00:11:16 | You would ... [inaudible 00:11:17] |
| Teacher: | 00:11:16 | Think of your own triangle with your own dimensions and then find it's area. So, these three steps I want you to show. |
| student: | 00:11:23 | Can you go past it instead of below it? |
| Teacher: | 00:11:32 | Yeah. I'm sorry I didn't understand what you meant. |
| student: | 00:11:32 | [inaudible 00:12:10] |
| Teacher: | 00:12:10 | When you are done have your neighbor check it. Don't just throw a number in the middle of the triangle. Base times height. [crosstalk 00:12:39] Since we did not give ourselves units to this problem ... Guys? Since we did not give ourselves units, go ahead in your answer put units squared. |
| student: | 00:13:04 | I just put centimeters. |
| Teacher: | 00:13:07 | If you want to put centimeters that's fine. Know that it is not drawn to scale so it's not really that many probably but we can pretend. Alright, here's the thing. You found your area. I'm going to give myself some numbers. I'm going to say 10 and 5 so base is 10 and height is 5. This is just mine. You don't have to copy it down because you have your own. So that answer would be 25. I'm telling you that the area here is 25 units squared. If I start with just the area and the height or just with the height and the area, you are going to have to find the other dimension. Student, can you take that off your head please? |
| Teacher: | 00:13:59 | What I'm going to ask you to do is work it backwards. In other words, used to be, we started we the rectangle or the parallelogram and cut it in half to make the triangle. This time I'm going to start with the triangle and you're going to have to make the corresponding figure to find the missing height. You have this little piece of paper right here. Cut the triangles out. Don't cut along the dash line. You should end up with 4 triangles. Do this now. In the mean time, while you're cutting these out, I'm going to pass you out some of that recycled printer copy papers. Okay, so cut these triangles out and we are not using rulers today. We are gonna use pretend measurements. |
| Teacher: | 00:14:49 | You know what else I need to give you guys? I need to give you your glue sticks. Cut them out like this. You should end up with 4 triangles that look like this right here. [crosstalk 00:15:06] |
| Teacher: | 00:15:15 | I'm probably going to end up giving you extra papers but that's okay. |
| student: | 00:15:15 | This is my triangle. |
| Teacher: | 00:15:15 | Oh no! What happened? |
| student: | 00:15:15 | It didn't [crosstalk 00:15:23] |
| Teacher: | 00:15:49 | Cut them out. I'm going to give you about another 30 seconds or so. [crosstalk 00:16:03] |
| Teacher: | 00:15:49 | Someone from each table please go throw away the left over paper. |
| student: | 00:15:49 | I call dibs. [crosstalk 00:16:35] |
| Teacher: | 00:17:07 | Student? Okay. You have the best seat in the house, don't you? Do you ... Did I give you a glue stick? Alright, three, two, one you should be done. Okay, so here's what we are going to do. Pick the 2 right triangles first, right here. Let's start with the rectangle. Not the rectangle, the one with the right angle and the bigger one is what I meant to say. So, at the top on the back of one of those colored papers, remember these are the extra printer copy papers that we've been reusing, put this title, "Finding the Base, underline the B, and Height, underline the H of a Triangle." Today's date is 3/5/18. Alright, so what I want you to do is trace your triangle like this. Trace it and put B equals 20, height equals I don't know, area equals what for this triangle? |
| student: | 00:19:08 | 80. |
| Teacher: | 00:19:13 | 80. So, 20 is here, height is I don't know, so there. Then I want to work it backwards. Remember before we started with a rectangle and cut it in half? If I want to find the height I'm going to work the whole thought process backwards. What should I do with this triangle? I already have one like it Now I have 2 equal triangles like this right? What do you think we should do? Student? |
| Student: | 00:19:41 | Divide area by base? |
| Teacher: | 00:19:42 | Divide are by base? Okay, if I divide area by base, I'm going to do some scratch work over here, you're saying take the area, divide it by the base. So, you are saying take 80 and divide it by 20 and my height is going to be 4. That's what you are saying right? Okay, so you are saying height is equal to 4? So, let me plug it back into here and see what happens. This is my formula right? I'm suppose to get 80 over here right? Because that's what the area is. If I do 20 times 4, divide by 2. |
| student: | 00:20:22 | That's 40. |
| Teacher: | 00:20:24 | Yeah, that's 40. |
| student: | 00:20:26 | Does it have to be inch? |
| Teacher: | 00:20:30 | So those are not equal. |
| student: | 00:20:33 | What if you double 40 and if you double 4. |
| Teacher: | 00:20:39 | I double 40 and I double 4? Wow! Here's what I was thinking. I was thinking of doubling something else. I like what you guys are thinking but I was thinking of doubling something else because remember the formula says area is equal to the base times height, divide by 2. This is base times height, divide by 2 on just this piece right here. What's the opposite of divide by 2? |
| student: | 00:20:59 | Multiply. |
| Teacher: | 00:21:01 | So, can I take this ... I was thinking I would give you a visual. Can I do that? |
| student: | 00:21:07 | I guess. |
| Teacher: | 00:21:10 | I just did so I guess I can. Think about that. Now, we said this triangle is 80. What is this one? |
| student: | 00:21:23 | 80. |
| Teacher: | 00:21:27 | 80? Think with me. You have an issue? What's your issue? |
| student: | 00:21:31 | I can't find my triangle. |
| Teacher: | 00:21:36 | Multiply each by 2. Okay, Student what do you mean multiply each by 2? |
| Student: | 00:21:43 | Well looking at it kind of like it will be different since you divide that by 2. [inaudible 00:21:51] |
| Teacher: | 00:21:51 | The rectangle? I don't know what you are trying to say exactly. I think I know what you're trying to say but I'm going to let you think about it a bit more. Think with me. I think maybe most of you have figured it out. I have this triangle. The triangle came from a rectangle so the triangle area was 80 then the rectangle area must be what? |
| student: | 00:21:51 | 160. |
| Teacher: | 00:22:27 | 160 because 80 over here and 80 over here. Let's draw a pretend little picture over here. If the whole rectangle is 160 and the base is 20, what does the height have to be? One of you said it earlier. Eight. Where does eight come from? |
| student: | 00:22:47 | You divide it. |
| Teacher: | 00:22:51 | I divide it. Or you think 20 times what is 160 and most of you might say 8? There's a couple of ways to think that over, think it through. I know you are a little bit like, "What?" That's okay. That's why we are going to practice and then I'm going to teach you the algebra way but we are going to practice it this way. Take the little triangle and let's repeat the process to find the missing side. I have this right here. That's my triangle that I started with. I don't know the base. The height is three and the whole area is 15. So, this ... Work it backwards. Follow the same thought process that we just used in the previous triangle. |
| Teacher: | 00:23:55 | While you are at it or when you get a second glue down your other triangle, your first one. Are they going to come get you or they going to send you on a little pause? Oh, okay. Yeah you can start that. Let's see I'm going to work on it and see what you come up with. Let's see what you come up with. We'll talk tomorrow about you coming in here. |
| Teacher: | 00:24:50 | If you finish this right triangle do it with the other triangles as well. |
| student: | 00:24:50 | What if they don't fit? |
| Teacher: | 00:26:46 | Who gave me this? [crosstalk 00:25:59] Hey, boys? Remember if you finish the little triangle then go ahead and move on to the other triangles. [crosstalk 00:26:57] Alright hey guys follow this thought process with me, okay? So, I have this little triangle right here. I need your attention, please. Whoa! That's too big. I have this triangle and this triangle right there, that has an area of 15, came from this rectangle correct? So then the rectangle is a total of 30. 15 and another 15. So the rectangle use to be 30 then 3 times what is 30? |
| student: | 00:28:29 | Ten. |
| Teacher: | 00:28:32 | Ten. And most of you got this. The base is 10 in units because I didn't give you an actual unit of measure. On the other ones our shape is going to be a little bit different but the thought process is the same. Notice I still haven't taught you the Algebra way yet. Do you want to know the algebra way now or after we finish the other two? |
| student: | 00:28:32 | Finish the other two. |
| Teacher: | 00:29:03 | Finish the other two? Okay. So, right here. Draw your triangle, this one's a little bit bigger ones. |
| Student: | 00:29:14 | Do we read the [inaudible 00:29:15] |
| Teacher: | 00:29:16 | Yes. Now, is this one going to make a rectangle? |
| student: | 00:29:27 | Yes. No it's going to make a parallelogram. |
| Teacher: | 00:29:32 | It's going to make a parallelogram because it's a little bit slanted. I have the height of 10, the area of 140 and the base, I don't know that's what we are going to find out. Take your triangle and draw in your numbers, just so you know what it's suppose to be and the area here is 140. Is that the parallelogram that I'm looking for? |
| student: | 00:30:02 | No. |
| Teacher: | 00:30:03 | No. |
| student: | 00:30:05 | These are not the parallelograms you are looking for. |
| Teacher: | 00:30:05 | These are not the drones you are looking for. That's a good one. Hey guess what I am going to have to put it right here. I'll rewrite those numbers. There's my parallelogram, right? |
| student: | 00:30:20 | Oh, yeah. |
| Teacher: | 00:30:20 | Yeah, think about it like this. Student, stop bouncing please. No happiness allowed. This blue triangle is 40. The white triangle is exactly the, I'm sorry not 40, 140. The white triangle is exactly the same size, so it's also 140. That means the whole parallelogram is what? |
| student: | 00:30:43 | 280. |
| Teacher: | 00:30:45 | 280. Are we so far so good? What does the base have to be? What does this have to be? I took the area of the triangle and I doubled it. I took the area of the triangle and I doubled it to make the parallelogram and now I know the area of a parallelogram is base times height. I have my height. What does the base have to be so that the whole area of the parallelogram, this huge thing, is 280? 10 times what is 280? |
| student: | 00:30:45 | 18. |
| Teacher: | 00:31:23 | 18? 10 times ... |
| student: | 00:31:23 | 28. |
| Teacher: | 00:31:24 | 28. |
| student: | 00:31:26 | Yeah, 28. |
| Teacher: | 00:31:27 | 28 units. So, can you ... Lets' do a little check here. Turn to your neighbor and tell him or her how I did this. How did I find the base? Talk through it with each other. [crosstalk 00:31:49] Alright, do we need to do the littler one or do you want the algebra now? |
| student: | 00:33:07 | Now. |
| Teacher: | 00:33:07 | Because you don't want to go around redrawing triangles all the time, right? |
| student: | 00:33:07 | I already did it. |
| Student: | 00:33:12 | But we really don't want to learn the algebra. |
| Teacher: | 00:33:14 | You really don't want to do any ... Well I'm sorry I'm going to teach it to you anyway. Hey, go back to here. Go back to this one. |
| student: | 00:33:24 | Alright. |
| Teacher: | 00:33:27 | Hey. We already know the area. It's 80. That's the original triangle that we talked about. We already know the base is 20 and here's our formula for the area of a triangle. Here's how you work it backwards in algebra. You do 80 for A, plug It in, I don't know what the base is, yes I do know what the base is. I always get my variables confused you guys. It's okay. The base is 20. Excuse my messy writing. Times the height over 2. Now, this is not the only way to do it but it's the way we've been thinking It through. I'm going to get rid of this half, because remember I started off with half with the triangle in a sense, but I doubled it to get the 160. Then I end up with just this. Kind of I did what on both sides? If I get rid of the two down here but I double the 80, I kind of did what on both sides? |
| Student | 00:34:33 | You doubled. |
| Teacher: | 00:34:34 | I doubled? Very good, Student. In fact I multiplied by 2 on both sides, which is the same as doubling the triangle. So, that's how this got it's denominator of 2 went away. Then this says 20 times what is 160, right? When we did our little equations unit we knew that we had to divide on each side by the coefficient, the number in front of the variable in front of the H. Basically I divide each side by 20 ... Boys, I don't feel like you're listening and you're going to be the first one's to ask me for help so please listen. Now I have to go through it again. |
| Teacher: | 00:35:13 | I start off with what I know, plug it in to the formula, double the other side, double both sides basically. That gets rid of the 2 here and makes the 180 a 60, divide each side by 20, which is what you did in your head actually when you gave me the answer a little while ago. The height is equal too 8. Student did all this in his head without knowing earlier. |
| student: | 00:35:41 | He did? |
| Teacher: | 00:35:42 | Yes, he did. |
| student: | 00:35:44 | Student. |
| Teacher: | 00:35:45 | Wow, Student! |
| student: | 00:35:47 | Student is the smart one. |
| Teacher: | 00:35:48 | The whole time he was bouncing on the yoga ball. His brain was just hitting the top of his head and the bottom of his throat the whole time. I'm just kidding. That was gross. I'm going to move on. So, boys and girls, algebra and the other one. Write down your formula, oh, we already have it. Write down your formula. We are looking at the little right triangle now. Write down your formula. We already know what the answer is but we are going to figure it out with algebra. What's the next step after I write down my formula? |
| student: | 00:36:20 | Times those? |
| Teacher: | 00:36:21 | No, don't times just yet. Yes, Student? |
| Student: | 00:36:24 | Proportions? |
| Teacher: | 00:36:25 | Not yet, no. Oh, come on. Yes, Student? |
| Student: | 00:36:34 | You write 15. |
| Teacher: | 00:36:36 | You write 15 equals? What's next? [inaudible 00:36:42] What? No, 10 is what I'm looking for, supposedly. |
| student: | 00:36:48 | Three? |
| Teacher: | 00:36:49 | Well, do we know what the base is, supposedly? No, there was a blank there. B times 3 ... Student, shhh. It's called substitution. We are going to substitute what we know and according to this I knew the height was 3, that's my H. I knew the area, 15 I put it here like that. That's what it looks like at first but then what did we do to the 15? We multiplied it by 2 or we doubled it, so we got ... |
| student: | 00:36:49 | 30. |
| Teacher: | 00:37:34 | 30 over here which is what I got on the rectangle equal to ... Hey guys I'm going to switch these around. I don't like the number behind the letter. I like it in front, but either way the last step is to do what on each side? |
| student: | 00:37:47 | Divide. |
| Teacher: | 00:37:47 | Divide by 3? Where do you see the 2? These went away. |
| student: | 00:37:55 | I am [inaudible 00:37:57] |
| Teacher: | 00:37:59 | Okay, like that. How did that make sense? I really do. This is not the only way to do it but I think it's the most direct way to do it for now. I have my formula. I plug in the information that is given. I double the area because they gave me the area. That gets rid of my 2 down there. Then solve the little equation. Yes? |
| student: | 00:38:26 | If the yoga ball makes Student smart does that mean this chair will make me smart? |
| Student 2: | 00:38:26 | It has to be a yoga ball. |
| Teacher: | 00:38:34 | Anyway. Alright, guess what. I'm going to ask Student and Student to be sure that they know how to work this out because I might ask one of them to come up here and show us the algebra for this math problem. In the meantime while they are figuring that out for us, how about you try it out on these. Just these three that's all we are going to do right now. You can redraw your picture if you want to make it a parallelogram or a rectangle or a whatever it makes or you can do just the algebra. The ultimate goal is that you can do just the algebra but you do whatever reasoning you need to do. |
| student: | 00:39:20 | What do we do with the shapes? |
| Teacher: | 00:39:21 | You glue them down. Student and Student I am waiting for you to do this big one for the class so one of you is ... |
| Student: | 00:39:21 | I've already got one. |
| Student: | 00:39:21 | I've already got one. |
| Teacher: | 00:39:29 | Did you show me all the algebra? Oh, that's what I thought. Yeah, the whole thing. These steps that I've been showing I want you to show them on ... |
| student: | 00:39:52 | That way is confusing. |
| Teacher: | 00:39:54 | But you need to know this way too. It's good that you can reason through it but I want you to be able to write out your thoughts. [crosstalk 00:40:11] |
| Teacher: | 00:40:10 | Where did you get the 42? Oh, there it is up there. I'm not even looking. Alright, the 84 is the whole thing. I want to know just this one here. Oh, let's not do it that way, sorry. The 84 is this parallelogram right here. So do me a favor, keep your 84 here and keep your 12H there. Give me just H. That's means 12 times what is 84? That's what you are trying to find. |
| student: | 00:40:10 | 84 divided by 12? |
| Teacher: | 00:40:10 | 84 divided by 12, that's right. [crosstalk 00:41:16] |
| student: | 00:42:30 | I think I just finished. H is equal to ... [crosstalk 00:43:09] |
| Teacher: | 00:43:08 | Student, you did it? You're so brilliant. Alright you did it and you got what? |
| Student: | 00:44:12 | 28. |
| Teacher: | 00:44:12 | Hey class, both the boys figured out the problem but their pictures are a little funny. [crosstalk 00:44:55] Student? Are you working on the second one? |
| Teacher: | 00:44:12 | [crosstalk 00:48:21] |
| Teacher: | 00:48:40 | So you're saying that 15 ... [crosstalk 00:48:41] |
| Teacher: | 00:48:41 | Okay, guys! Class! Here's the thing, the bell is going to ring in less than a minute. If you did not finish the three problem on the right paper, finish those for homework. You still have all that other stuff for triangles that I have not picked up yet, that's okay. |
| student: | 00:49:44 | Wait, wait, wait I just need two victory points on my ... |
| Teacher: | 00:49:47 | Okay, hold on. Keep everything. Put it in your binder the way it is suppose to be ... Okay, hold on. Student, pay attention please. This is homework. Keep all the other stuff until tomorrow. You don't have to turn anything in, in other words. We'll talk some more about this tomorrow, bye guys. [crosstalk 00:50:18] |
| Speaker 9: | 00:50:38 | End of class for Teacher. |

Transcript #5: Integers Review

|  |  |  |
| --- | --- | --- |
| Speaker | Timestamp | Text |
| Teacher | 00:00:58 | Tomorrow. I do have, I passed out a review sheet and a highlighter. The ones that are highlighted on my sheet, you're going to highlight on yours. You're going to write down what I write down and in return of doing what I've asked you to do, I will give you the answer key today to go along with the study guide. Take them both home. I'm going to staple it together. Get it signed and bring it back tomorrow. Tomorrow only and you can get ten extra points on your test. Remember, this ten points made a big difference when we looked at our unit one scores. It made a huge difference. for some of you it made you go from a bad grade to a really good grade. OK? It's an easy ten points. So that's kind of what we're working on. Yes, just have your parents sign it. There's a spot at the top.  |
| Student | 00:01:52 | The top.  |
| Teacher | 00:01:53 | OK? So, here is your paper. Your child's studying for the unit two test. The test is Thursday. Return signed by parent and get ten extra points on the test. Your parent can sign it right there. If it needs to be your older sibling, that's fine too. I am not your parent. I know in science, I pretend I'm your parent and I'll sign it, but in my math class, I'm not going to sign it. You'll have to ask a different adult. Maybe Ms. Teacher will sign it if you forget to get your parents to sign it. OK? Because in Ms. Teacher’s class you have to bring her science test reviews signed by your parents, right? You have to bring them back signed? Is she doing that this year?  |
| Student | 00:02:31 | Yeah.  |
| Teacher | 00:02:33 | Yeah? OK. And I usually sign them for students and that's OK. Just get those ten points. We're going to look at the highlighted ones. The ones that aren't highlighted I'm not going to worry about. Yes, they're important but the ones that are highlighted match closer to what you're going to see tomorrow, and I wanted to get us closer to playing jeopardy, OK? So we're going to look at our number line. We're ordering the temperatures from warmest to coolest and we're looking at this one right here. You might want to highlight this one with your highlighter. I picked this one because it's got a fraction in it and the one tomorrow is going to have a fraction in it and you're going to have to know what to do with it. Let's look where - let's just start with the fraction. Who remembers what 1/2 is? Remember I told you to put your benchmark fraction sheet on the refrigerator or your bathroom mirror so every time you got a snack or washed your hands, you could look at it and you could memorize some of them? Who memorized what a 1/2 is as a decimal? It's point something.  |
| Student | 00:03:45 | .5?  |
| Teacher | 00:03:47 | Yes it is .5. Way to go Student.  |
| Student | 00:03:50 | I had it.  |
| Teacher | 00:03:51 | You had it? So, it's -2.5. If you don't know, you could just do NED and DONKEY. You could still just do long division and it'll still get you there. But this is a lot faster.  |
| Student | 00:04:04 | I did put 2.5.  |
| Teacher | 00:04:09 | Yeah. We put the two in front of it because it was already there. So, remember I'm going to abbreviate negative numbers closest to zero are big. OK? I did some combination of symbols and pretending like I'm sending my mother a text.  |
| Student | 00:04:37 | That's about [inaudible] |
| Teacher | 00:04:39 | I would. Negative numbers close to zero are big. OK? Those are going to be the bigger numbers. Remember? So, when we look at negative, so we're on this side of the number line, 0.2, where would .2 go? Who knows where it would go? Where would it fall between?  |
| Silence | 00:05:02 | [silence] |
| Teacher | 00:05:04 | Does it fall between -1 and -2? Or 0 and -1?  |
| Silence | 00:05:10 | [silence] |
| Teacher | 00:05:16 | This one right here. You don't know? So, does it have a whole number right here? A 1 through 5? What number is right here? What number did I circle? Really? Y'all don't know what number I circled in red? What number is that? |
| Student | 00:05:38 | zero, zero.  |
| Teacher | 00:05:42 | Is it going to be closer to the zero and the one or the one and the two?  |
| Student | 00:05:46 | Zero and the one.  |
| Teacher | 00:05:47 | Good, zero and the one. So, now we know it's going to be somewhere between the -1 and the zero, where do you think .2 would come? Is that closer to zero or closer to one?  |
| Student | 00:05:59 | Closer to one.  |
| Teacher | 00:06:00 | Why do you think it's closer to one? It's .2. Zero point two. I'm just asking to be reasoning so I can help. Was it just a guess? OK, that's all you've got to say. I don't know, I just guessed. It's almost, it's barely past zero. If we were going to do little tiny ticks, it would just be right here. Because there's one, two. It's just barely past zero. Just barely past it. So that is the .-2. So now we're going to look at the -6. Where does the negative six fall? Our number line doesn't extend out too far so we have to use our imagination. Where would the number 6 fall, -6 fall? Would it fall on the positive side or the negative side?  |
| Student | 00:06:52 | Negative side.  |
| Teacher | 00:06:54 | Good. The negative side. And what number should it go on? We might have to draw it in. It should go on a 6 right, because it's -6?  |
| Student | 00:07:03 | Yes.  |
| Silence | 00:07:04 | [silence] |
| Teacher | 00:07:09 | So far, which one is warmer? Which one is biggest? Is it the -.2 or the -6? |
| Student | 00:07:23 | Negative 6? No, [inaudible]  |
| Teacher | 00:07:27 | good, thank you for changing your mind. Student is correct. He says it's -.2 because it's closest to 0. Remember negatives close to 0 are big. I need someone else to participate with me and Student. Not just me and Student. Because there's other people in here. It's not just me and him. Student and I have done that before. It's not that fun when it's only two of us and we're trying to do a review. Was it, Student? Wasn't that fun, huh? Now we're going to look at -7.124. Where would that fall? You've got to extend your number line out a little bit more again. It would go on the -7. Do you agree or disagree? Student, do you agree or disagree? It would go around the -7 area? On the number line? |
| Student | 00:08:24 | [inaudible]  |
| Teacher | 00:08:29 | It would be just a little bit past it, so it would go around the area, right? Of -7? So, now let's look at -2 1/2. That's what we had right? We know 1/2 is right down the middle. That's about down the middle, wouldn't you say? Student, do you need a pencil? Is that why you're not writing? Open the pencil box on the table and borrow one. I'll give you one after class. You have to raise your hand or ask if you don't have something. Don't just sit there, OK? So we're looking for the warmest. Which one is closest to zero? We have them on our number line. Which one is closest to zero? |
| Student | 00:09:16 | [inaudible] Two?  |
| Teacher | 00:09:23 | Good, Student. The .2, -.2. -0.2. Let me change my classes.  |
| Silence | 00:09:39 | [silence] |
| Teacher | 00:09:44 | They have changed the app. Oh here we go. No.  |
| Silence | 00:09:51 | [silence] |
| Teacher | 00:09:58 | Why? All right, the wheel of death has spoken and it is Student. What is the next warmest number? I started here because this is the warmest number. Which number is next?  |
| Student | 00:10:22 | [inaudible]  |
| Teacher | 00:10:27 | You can look at your number line. We plotted them on our number line. Which number comes next?  |
| Student | 00:10:33 | two point-- |
| Teacher | 00:10:34 | Let Student do it, Student, Thank you.  |
| Silence | 00:10:35 | [silence] |
| Student | 00:10:41 | Negative zero--Negative [inaudible]  |
| Teacher | 00:10:52 | Did you write what I wrote? On your paper? Be honest please. Did you write what I wrote on the paper?  |
| Student | 00:10:58 | Some things.  |
| Teacher | 00:11:00 | Some of it? OK. We've already did the -0.2, which one comes next? Look up on the board because maybe you don't have it. Here's the one we just did. Which one comes next?  |
| Student | 00:11:15 | Oh, -2.5?  |
| Teacher | 00:11:18 | Yes. Make sure you use your number line on the test. It's going to help you. All right? The wheel of death has spoken and it is Student. What comes after -2.5 What comes next on our number line? Not 5. There you go. -6. All right. The wheel of death has spoken and it has chosen Student. Which one comes last?  |
| Student | 00:11:58 | -7 |
| Teacher | 00:11:59 | Good. -7. So we put them in order from warmest to coldest. When the weather man comes on the news channel and he says it's -15 degrees outside, am I going to wear shorts or should I wear pants? It's -15 degrees outside. Do I wear shorts or do I wear pants?  |
| Student | 00:12:23 | Pants?  |
| Teacher | 00:12:24 | Why?  |
| Student | 00:12:25 | It's cold?  |
| Teacher | 00:12:27 | It's cold. -15 is very, very cold. OK? The closer you get to the zero, the warmer it gets. So, if it was -15 yesterday and today it's -5, it's still cold but is it as cold?  |
| Student | 00:12:46 | No.  |
| Teacher | 00:12:47 | No, because it's closer to zero. You have questions? If you don't understand, this is the time to speak up because tomorrow on the test I can't help you. No questions? OK, let's move to the next one. We're moving down here. You're going to highlight this. Use the number line to answer the questions true or false. You are going to have one like that - like this on your test so you are going to need this. Let's look. We have our number line. It's been provided for us. It says -0.1,which is about right here where that dot is, is greater than - Oh, my bad. Hang on. -0.1 is greater than the number marked on the line. So -.1 is going to be really, really close to zero or really, really close to 1? Talking about the number 1. We're talking about the -0.1. Is that going to be closer to the 1 or closer to the zero? |
| Silence | 00:14:01 | [silence] |
| Student | 00:14:02 | Zero? |
| Teacher | 00:14:03 | Think back to when you were a kid. When you were younger and you were in the stores with mom or dad, did mom or dad say, "you have until the count of three to get over here"? Did they do that? |
| Student | 00:14:14 | Yes.  |
| Teacher | 00:14:15 | Did they count one, two, three or three, two, one?  |
| Student | 00:14:19 | Three, two, one.  |
| Teacher | 00:14:20 | Three, two, one? All right, so which number is closer? If I was doing that and I would go one and a half, one and a fourth, one, then I would start over. I would say three-fourths, one and a half, one-fourth, times up. Right? Because you'd be back at zero? So think about the little number that come in between. Does .1 come in between here? Because it has a zero up front. that means it's closer to zero. It's not a whole number, so it's going to be right here. Is that one bigger than the number marked right here? This one's bigger. This dot or this dot? The one closer to -1? I put it in the wrong spot. Sorry guys. I'm totally goofing up. Don't listen to that one. That one's a booboo spot. Sorry. That one's a booboo spot.  |
| Student | 00:15:29 | I did that.  |
| Teacher | 00:15:30 | I know. I'm sorry. That's a hazard of having Ms. Student sometimes be your teacher is I get things backwards. It'll be alright. We'll survive it. It's closer to zero so it means it's greater, right? Because negative numbers we wrote up there. So, it's bigger, so this one is true. Let's look at -5. Here is -5. Is -5 bigger. is -5 greater than the number marked?  |
| Student | 00:16:03 | Yeah. No.  |
| Teacher | 00:16:05 | True or false. The wheel of death is going to speak because it's back to Student being the only one talking to me and we've got other people in the classroom. The wheel of death has spoken and it says, Student. Is -5 greater than the number marked? Is -5 bigger than this one? Is -5 bigger than this one? |
| Silence | 00:16:31 | [silence] |
| Teacher | 00:16:34 | Good, it's not. Because -5 is far away from zero. This one's closer. On the negative side, if it's closer to zero, it's bigger. It's the opposite. It's like sponge world's opposite day. OK? All right, so -2 1/2 is greater than what's marked on the number line. 2 1/2 is about there. Which one's bigger? The wheel of death has spoken and it's Student. Student what is bigger? -5 or the point that is already on the graph?  |
| Silence | 00:17:12 | [silence] |
| Teacher | 00:17:15 | This point or -5?  |
| Student | 00:17:18 | This one.  |
| Teacher | 00:17:19 | Good. 2 1/2 is greater, that's going to be false. All right, last one. These numbers down here, they want to know are they ordered from greatest to least? Remember it's big - I'm not good at writing sideways - to small. Are they ordered correctly? You can use your number line to tell you. Student, are those ordered correctly? Student says they're true. Who disagrees? Are you writing this down, Student? Because that's what you're supposed to be doing. That's what you're supposed to be doing, the highlighted ones. You're writing them down and highlighting. Student is correct. It is in the right order. All right. I'm going to come by and check to see how much you've done on the front side to decide if we need to move on - if we can move on to the jeopardy game or if we are need to go forward on our review sheet.  |
| Silence | 00:18:30 | [silence] |
| Teacher | 00:18:39 | It looks pretty good. You need to get caught up. I saw it when I walked by. I'm going to give you the review sheet because I want us to be able to play the jeopardy game. Actually I'm going to have somebody help me pass them out. Can you give everybody one for me, Student, please?  |
| Silence | 00:18:55 | [silence] |
| Teacher | 00:18:59 | I'm going to put you into teams of two to three.  |
| Students | 00:19:03 | [crosstalk] |
| Teacher | 00:19:10 | Believe it or not, I thought about the teams last night when I was trying to go to sleep. I was like, oh I didn't create teams for today, so that's what I did before I went to bed. I thought about you guys and put you into teams. I have Student and Student as a team. I have - don't use the highlighters. Use the other marker I'm giving you. I have Student and Student in a team with Student. So you're going to need to move by your team. And then I have Student and Student. Did I call you Student?  |
| Student | 00:19:49 | Yeah, you called me with Student and Student.  |
| Teacher | 00:19:54 | Yeah, that's where I want you. I didn’t write it down, so it's scary. Who are you with? You're with Student, yes? And Student? So, y'all should go there and Student's going to come here. Get your white board, Student and your dry erase marker.  |
| Students | 00:20:11 | [crosstalk] |
| Teacher | 00:20:14 | You need your white board and your dry erase marker. I would sit at a different table. So, Student and Student are going to move to Student. They're going to move to you. Student's going to move here. The girls have got it figured out.  |
| Silence | 00:20:32 | [silence] |
| Student | 00:20:35 | [silence] |
| Teacher | 00:20:37 | Please make sure you use the dry erase and not the highlighter. It does make a difference.  |
| Silence | 00:20:44 | [silence] |
| Teacher | 00:20:56 | All right, so here is our jeopardy board. We have absolute values, ordinary rational numbers, coordinate planes, classifying rational numbers and number lines. I'm going to click on one to get us started. You're going to work together in your group. If you're not participating, if you're not writing and using your words then your grade will be very bad for today. This is your grade right here. So if you want a good grade, it's going to be the first grade of the six weeks. Make it 100. All right? All right we are going to go with absolute value. Let's just do 10. What is the absolute value of point F? Where is point F? What is the absolutely value? First one to know it, write it on your dry erase board and hold it up. Student, did I not give you one, sweetie? I'm short one. I'm sorry. Do you mind sharing? I'll give y'all extra time. Or you can write on the table. What is the absolute value of point F? Let's see it.  |
| Students | 00:22:20 | [crosstalk] |
| Teacher | 00:22:21 | I have a -3.0. No, try again. The absolute value. Absolute values are always what? P? They're always P - Positive. Good job. Let me see yours. You didn't write anything? That's all right. All right. Student's team, which one - I forgot I set it down. Which one are y'all going for? Are you going for absolute value, ordering rational numbers, coordinate plane, classifying numbers or number line? |
| Student | 00:23:01 | [inaudible] |
| Teacher | 00:23:03 | Make sure y'all include Student because she's on your team. Student if you need to move your chair to the end of the table, you can.  |
| Students | 00:23:06 | [crosstalk] |
| Teacher | 00:23:11 | Absolute value?  |
| Student | 00:23:12 | 40 |
| Teacher | 00:23:13 | 40? All right. True or false? You have to tell me T or F, true or false. The opposite point of point F is equivalent to the value of point B. Remember equivalent means it's equal. True or false. The opposite of point F is the value of point B? Get your partner involved, Student. Get your partner involved. T or F. Come on, hurry. Time's going. Good. Let me see. We got--Good. Student, did you write on there? Good job, Student and Student. Y'all were technically first so Student and Student, where are we next? Where do you boys want to go next? Do you want absolute value? Ordering rational numbers, coordinate plane?  |
| Student | 00:24:13 | Rational numbers.  |
| Teacher | 00:24:15 | OK, you want 10? What number do you want? 50? All right. Student, we're going to 50. Get ready. Why is it not working?  |
| Student | 00:24:31 | [inaudible] |
| Teacher | 00:24:32 | You said rational?  |
| Student | 00:24:34 | Yes.  |
| Teacher | 00:24:35 | OK. True or false, the absolute value of point A is the same as the value of point A. The absolute value. You could put T or F on your board. True or false. You don't have to write it all out. The absolute value of point A is the same as the value of point A. That's interesting everybody said false. Really? I think it - I disagree with you.  |
| Students | 00:25:02 | [crosstalk] |
| Teacher | 00:25:07 | Y'all were right. The absolute value of A. Where's A? Oh, A is -5. Is the same as the value of 5. All right, it helps if miss Student can read it correctly, huh? It's all good. All right, who got it first? OK, where are y'all going? Talk to your teammates.  |
| Silence | 00:25:29 | [silence] |
| Student | 00:25:36 | Number line 10.  |
| Teacher | 00:25:39 | Number line 10.  |
| Student | 00:25:40 | Yes.  |
| Teacher | 00:25:41 | Number line 10. All right, here's the number line. Which answer choice best describes the locations of A, B and C on the number line above? Is it A, -1.25? -1/3 or positive 1 3/4? B, 1 1/4, .25 or negative 1 3/4? C is -1.25, .25 and positive 1 3/4. D is -1, 1 3/4, 0, 1 and 2/4. I have B. I've got D. Y'all say D as well? Let's see.  |
| Student | 00:26:35 | B not D.  |
| Silence | 00:26:36 | [silence] |
| Teacher | 00:26:46 | The answer is -125 is smallest, .25 or 1 3/4.  |
| Students | 00:26:59 | [crosstalk] |
| Teacher | 00:27:03 | Because 1 3/3 doesn't give you the same decimals as 1 and 25. The would be like 1/4. So, that's why.  |
| Student | 00:27:14 | [inaudible] |
| Teacher | 00:27:15 | I don't know. All right. No one got it right so I'm going to choose. True or--Which statement is true? Every rational number is an integer. Remember the where's waldo. Every whole number is a rational. Every integer is a whole number. Integers are what? Positive, negatives. And D, a whole number is not a rational number. Which statement's true? This will be the last question so we have time to pick up and pass out prizes. You think it's A? A? What do y'all think? A? All right, let's see. B. Every whole number is a rational. Let's look. If it's a rational number, it's an integer. Meaning, is it only negative numbers can be rational numbers? So no, it wasn't A. C, every integer is a whole number. Do negative numbers go in the whole number category? No. Whole number is not a rational number. If you're a whole number, can you be an integer? Yeah. Because remember we start at the bottom and go up. Yes, you could be a whole number and be an integer and you can be a whole number and you'll go in integer and a rational number. You'll go into all three. All right? So go ahead and put chrome books away. Make a pile of the markers and the white boards and pack your homework and your test review up. When you're done and your area's clean, I'll give you a treat for playing the game. Remember we're going to sit on our bottoms until the bell rings.  |
|  | 00:29:11 |  |
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