

JACOB DISSTON: You saw this on the test, what do you think the instructions would say?

STUDENT: Solve for "a".

JACOB DISSTON: Solve for, okay. Are there any others that would be like solve for?

STUDENT: Solve for f.

STUDENT: And like with equations, they can be equal. Like these right here, they can be equal because they have the greater than or less than equal to sign. These just have the greater than or less than sign so these are like inequalities. So these can be equations and or inequalities. These just say inequalities.

STUDENT: Okay, alright.

STUDENT: What do you think about these inequalities? What do you think of the difference? Can you tell the difference between these signs?

JACOB DISSTON: Can you pick up where she left off? So she says these ones have the equal part and they can be solved; they can be put on a number line. She was about to go onto these ones, so how are they different?

STUDENT: Well first of all, these are negatives...this is equal to or greater than and this is just greater than.

JACOB DISSTON: And why is that important to know? Why do I want 7th graders to be able to look at those and say "this is different from this; these ones all go together and these ones all go together and they're fundamentally different?" What is important?

STUDENT: Because they all can be put on the number line...

JACOB DISSTON: And what's going to be different about these on the number line and these on the number line?

STUDENT: This is like if you have an arrow pointing somewhere...ok, like for these if you point to a certain way the number itself can be used as an answer.

JACOB DISSTON: Yes.

STUDENT: So like an equation and for these ones the number itself can't be used.

JACOB DISSTON: That's right. What do we call the number itself? It's on that poster. Number one.

STUDENT: Boundary.

JACOB DISSTON: That's right, that boundary point can be used as an answer and here it can't. So that's really important. So I want you to describe the differences you see and tell me how it fits and how you tell the difference. Then I want to pull out your equations and do the same thing with equations.

JACOB DISSTON: You guys have a way of describing the differences among equations right?

STUDENT: YES.

JACOB DISSTON: Alright, so I want you to finish talking about how these are different from each other; I mean finish writing. I want you to pull out your either inequalities or expressions and do the same thing. So I want you to get to two of these top level categories. Alright you guys, tell me what we know. You are saying these...

STUDENT: These you don't have to solve for, these are properties that I can associate with (inaudible), and then you have to solve for variables.

JACOB DISSTON: Ok, so if I put this one on a test, what would I be asking you to do with it? What do you think? Let's say this is on a test but the instructions got torn off, what do you think this would say? What would I ask you to do with this equation?

STUDENT: Solve it.

JACOB DISSTON: So is this a solve type?

STUDENT: No because you don't have to solve it. It already has an answer.

JACOB DISSTON: What does it mean to solve this equation?

STUDENT: You don't have to solve it.

JACOB DISSTON: So he's saying you could solve it.

STUDENT: You could solve that.

JACOB DISSTON: What do you mean by solve it? He's saying you don't have to solve it because you've got an answer.

STUDENT: Right here, look. You have to do minus 105 and then here...you have to minus 105 and then here which still makes no sense.

STUDENT: Negative 4 divided by 2 so it would be positive...

JACOB DISSTON: What's negative 4 divided by 2?

STUDENT: Negative 2.

JACOB DISSTON: Negative 2, so if I plugged in -2.

STUDENT: Divided by?

JACOB DISSTON: Because he said divide that by 2 so once you get  $-4/2$ ...

STUDENT: So -22...

JACOB DISSTON: Not -22. What is 2 times -2?

STUDENT: -4

JACOB DISSTON: -4. 105 plus -4.

STUDENT: 109.

JACOB DISSTON: On my wall I add -4 not positive 4.

STUDENT: It would be 101.

JACOB DISSTON: So did you just solve this equation?

STUDENT: Yes.

JACOB DISSTON: So is this a solve it type of equation?

STUDENT: Yes.

JACOB DISSTON: Ok, so that's a solve it, that's a solve it...

STUDENT: No, these are solve it for the variables.

JACOB DISSTON: I want you to name these categories. You've got a solve it type, and what did you call these?

STUDENT: Properties...

JACOB DISSTON: So these are just properties; they stand for properties. So I want you to put those on your page. Get them written on your page.

STUDENT: All of them?

JACOB DISSTON: I just want you to talk about the different categories you solved. Okay Vanessa, are you good? Get the different categories on your page. Talk to each other as you're writing so you know what you're writing. You look confused.

STUDENT: He is confused.

JACOB DISSTON: Help him get unconfused. You guys are all confused in different ways though. Help each other get unconfused.

STUDENT: So is this a good explanation?

JACOB DISSTON: Let me see. So Jasmine, did you read what she wrote?

STUDENT: Yes.

JACOB DISSTON: Did you think it was a good explanation? You did and you didn't trust her? That wasn't good enough for you?

STUDENT: Yes, I said yes.

JACOB DISSTON: Why did you have to ask me?

STUDENT: Oh no I...

JACOB DISSTON: He said it was good.

STUDENT: Okay.

JACOB DISSTON: Okay, so now I want you...are you satisfied with that?

STUDENT: Yes.

JACOB DISSTON: So I want you to...I guess you explained how you could tell. So now I want you to start with the equations.

STUDENT: How do I do equations?

JACOB DISSTON: You're going to put these ones aside and you're going to pull all your equations out and say "how are they different and how are they alike?"