

## Introduction Part B:

BARBARA SHREVE: Finish up the problem you're working on. Fifteen seconds. So we're not going to go over all of these, but would somebody like to share how they started the intercepts problem? Because that's going to relate to...

STUDENT: Number one?

BARBARA SHREVE: Yeah, number one. You want to try it, Kateef?

STUDENT: Sure.

BARBARA SHREVE: All right! Come on up. Can you make sure you're not just showing us what to do but you're talking and giving us reasons?

STUDENT: All right, I will.

BARBARA SHREVE: Thanks.

STUDENT: So I had to make the zeroes or whatever. So I put zero in for  $y$ . So 5 times zero plus 81 equals  $10x$ . Then 5 times zero equals zero, so I rewrite the problem  $0+81=10x$ . And I have to get my numbers on one side and my  $x$ 's on another. And  $0+81$  that's 81. So that'll be  $81=10x$  and I divide it by 10 because you always divide (inaudible) the  $x$  (inaudible). And it comes out to be  $x=8.1$

BARBARA SHREVE: So that's the  $x$  value right? How would you write it to show that it's the whole  $x$ -intercept?

STUDENT: I don't think I know how to do that.

BARBARA SHREVE: Okay. You started this problem by putting in zero for  $y$  right?

STUDENT: Yeah.

BARBARA SHREVE: So how can we, can we use those two numbers together to write it as a point? Do you know what I'm talking about? Can anyone help him out?

STUDENT: If you put as a coordinate, you put 8 point one and a zero.

STUDENT: Excuse me?

STUDENT: If you put it as a coordinate, your  $y$  is going to be a zero, so you're going to put 8 point 1 comma zero.

BARBARA SHREVE: So in parentheses? So it'll be a point? And I want to open this question to Kateef or anybody. If we're finding an  $x$ -intercept, why do we start by putting a  $y$  and 0? Anybody have an idea?

STUDENT: Then you're only solving for  $x$ , right?

BARBARA SHREVE: Yeah, but how do we know the  $y$  is 0 and not something else? Why don't we put 10 in for  $y$  or 7, -2?

STUDENT: Because zero is always the easiest thing, I guess.

STUDENT: No. Because you want to cancel it out, right?

STUDENT: Zero is where the line crosses.

BARBARA SHREVE: Okay, we got three good answers in there and you were all super quiet.

STUDENT: You want to cancel them out.

BARBARA SHREVE: You want to cancel them out. You want to have just an  $x$  equals at the end, right? Terrence, what did you say too?

STUDENT: I said because zero is where the line crosses.

BARBARA SHREVE: So if we're looking for that point where the line crosses the axis, we know that at that point, that  $y$  is going to equal zero because we're only moving in the  $x$  direction. We're moving left and right, and then we're not moving up and down on the graph, if you can picture that in your head. Okay? Kateef, do you want to find the  $y$ -intercept also?

STUDENT: No.

BARBARA SHREVE: Please.

STUDENT: I don't know how to do the  $y$ -intercept.

BARBARA SHREVE: Will you be willing to be our scribe and do the writing, and let somebody else help you? Francisco, how should he start for the  $y$ -intercept?

STUDENT: Isn't it the same?

BARBARA SHREVE: Sort of... This one. So what do we have to do this time? What do we put in zero for?

STUDENT: For  $x$ .

BARBARA SHREVE: Yeah. Did you hear what he said?

STUDENT: So you don't have to put a problem like this in "y form"?

BARBARA SHREVE: Oh, great question. While Kateef is writing, what do you guys think? In order to find these intercepts, does he have to put it in "y form" first?

STUDENT: So it'll be like this?

STUDENTS: Yeah.

BARBARA SHREVE: Nobody's answered Kayla's question though.

STUDENT: I didn't hear Kayla's question.

BARBARA SHREVE: Oh, even better question then. "Y form." Do we have to make it so that the equation looks like  $y=mx+b$ ? Before we do it? Or can we leave it looking like this?

STUDENT: You can leave it looking like this.

BARBARA SHREVE: Too many people talking at once. Francisco said we can leave it like that. What did you say Josalyn?

STUDENT: Get 81 to the other side then make it to a negative.

BARBARA SHREVE: Okay, so you're saying what Kateef's next step should be.

STUDENT: You should get 81 but when you bring it down, it'll be negative 81 and put it to the other side.

STUDENT: So you can write it like  $5y+81=0$ .

STUDENT:  $5y+81=0$ .

STUDENT: Then you're going to subtract 81 from 81 and it's zero. Then it's going to be  $5y=-81$ .  $5y=-81$ . And then you're just going to divide by 5 and it's going to give you the y.

BARBARA SHREVE: You can leave it as a fraction if you want. You can leave it as -81 over 5.

STUDENT: Negative what?

STUDENT: Negative sixteen point two.

BARBARA SHREVE: So Kayla, can I ask you a question?

STUDENT: Yes.

BARBARA SHREVE: When you did yours, did you put it in "y form" first? Did you get all the y's on one side and everything else on the other?

STUDENT: Yeah but I think...I'm not quite sure but I think (inaudible).

BARBARA SHREVE: Did you get the answer over here? Did you get the same answer for your y?

STUDENT: Nope.

BARBARA SHREVE: Oh! Did you just erase it?

STUDENT: No. I'm just going to do it the way I told him to do it.

BARBARA SHREVE: Okay. I just want to take a look so I could see how you put it in y form, so don't erase it. Will you write it just next to it?

STUDENT: Okay.

BARBARA SHREVE: Okay. So did anybody try putting it in "y equals" form before they solved? Yeah or no? If you did, you should still get the same answer because we're just changing around the equation to look different before we start. And so if it's easier for you to deal with it that way, you can but you can also put the x and the zero in for x, or substitute the zero in for y, right in this form. You don't have to change it first. Okay? So we're going to come back and look more at intercepts. We're going to use this stuff with intercepts today as we're looking at our parabolas. We haven't done this with lines in a little while, so thank you for that practice and refresher. Do you guys want to ask any last questions before we go? Okay.