

Comparing Slopes Transcript

- 1 Teacher: A slope of zero, what the heck is that? I thought that was a mistake at first. How can
2 you have a slope of 0? Veronica?
- 3 Veronica: Um, well it's has to be like a straight line.
- 4 Teacher: A straight line going. Can you do an air graph? Is it like, which way?
- 5 Veronica: Um. Well, I think it's like. Wait, I just know it's a straight line. I'm not sure which way
6 it's going.
- 7 Teacher: Hm. Think about that for a minute. What point did they give us?
- 8 Veronica: Um. (-5, and $\frac{3}{4}$).
- 9 Teacher: So if slope is rise over run and she's saying straight line, what would. Should we put it
10 in a calculator? Or can we just take a guess? Which answer was it? S or M?
- 11 Students: S
- 12 Teacher: S. How come there's no x in there? What if I put in an x of 1, what will I get?
- 13 Student: Um, it'd be the same thing.
- 14 Teacher: What do you mean by the same thing? I'll get what? If x is the input, what's my
15 output? Using the equation $y=\frac{3}{4}$?
- 16 Patrick: And since the second number is the y then $y=\frac{3}{4}$, it has to be $\frac{3}{4}$.
- 17 Teacher: It has to be $\frac{3}{4}$. So. This point here, they say if you put in a -5, I get $\frac{3}{4}$ so it's like, if
18 that's my 1 and that's my -5. You just said if I put in a 1, I also get $\frac{3}{4}$? What if I put
19 in a -2?
- 20 Student: $\frac{3}{4}$
- 21 Student: It's the same.
- 22 Teacher: $\frac{3}{4}$. Oh, so now Veron- yeah, it's, wh-cho, like that. So it's a horizontal line, maybe is a
23 better way to say it than straight. And why is the slope 0?
- 24 Patrick: Cause it's never moving up.
- 25 Teacher: It doesn't go up. Does it? There's no change. There's no change in y. So Peter was
26 telling me a minute ago that the slope, he reminded me was the change in y over the
27 change in x. And if I even just pick those two points I'm gonna $\frac{3}{4}$ minus $\frac{3}{4}$ over
28 whatever I get there. I'm gonna have 0 over something. So it's always going to be 0.

29 So that's a good thing to know that problem, in particular, if you have a slope of 0, that
30 it's a horizontal line.

31 What's the slope- what if I have a vertical line, like this? What's its slope? This would
32 be, I'll call this $x=-5$.

33 Patrick: It'd be ne-

34 Student: It'd be zero.

35 Teacher: Arnas?

36 Arnas: It'd be 0.

37 Teacher: Zero? How do you get zero?

38 Arnas: Well because if it's horizontal, uh. If the origin is 0,0 and if it went like up and down
39 and didn't like move at all, it would be 0.

40 Teacher: Zero. Ok let's pick a couple points, then. If we have, let me erase this. I'll draw us a
41 new pretty picture. So if we have (0,0) and I'll then take (0,5). So Patrick?

42 Patrick: The slope is zero because, since you subtract the change in x and the change in y. So
43 you'd subtract 0 and 0 and 5 and 0. So on the top there'd be 0 and on the bottom
44 there'd be 5 and any division problem that has zero in it, it has to be zero.

45 Teacher: Ok, there's one thing I'm confused. Alfredo?

46 Alfredo: It's undefined.

47 Teacher: How are you getting undefined?

48 Alfredo: 'Cause it, there can't, um, in division there can't be a number over zero. Cause there's
49 no zeros in the number.

50 Teacher: So in contrast to what Patrick's saying, you're saying the zero is not on the top, it's on
51 the bottom?

52 Alfredo: Yeah.

53 Teacher: So if I put y_2 , what's my y_2 , I'm gonna have 5 minus 0 over 0 minus 0. So I'm gonna
54 get 5 over 0. Is that where you're gettin' your undefined from? You guys see that?
55 Arnas, you see the difference? Patrick?

56 So there's two kind of special cases with the slope. If you have a slope of zero, it's
57 horizontal. If you have an undefined, it's a vertical line. So you might want to write
58 that down near, um, your number 12 there. Just to remind you.