Geometry
Unit: Lines and the Coordinate Plane
Section: Graphing the Equation of a Lines

Flash Cards: Slope of a Line on a Graph

Directions: Answer the following questions.

1. Write the equation of the line through the points (4, -5) and (8, -1) in slope-intercept form.

2. Write y minus 3 equals one-half times the quantity (x minus 10) in slope-intercept form.

3. What is the slope of the line that is perpendicular to y minus 9 equals 2 times the quantity (x plus 3)?

4. What is the slope of the line that is parallel to y equals 5 x plus 9?

5. Does (4, 5) lie on the line y equals 3 x plus 1

6. Write the equation of the line perpendicular to y equals 4 x plus 8 that passes through the point (negative 12, 7) in slope-intercept form.

Answers:

1. First find the slope. M equals y 2 minus y 1 divided by x 2 minus x 1 equals negative 1 minus negative 5 divided by 8 minus 4 equals 4 divided by 4 equals 1. Now you can use either method to write the equation. Y equals m x plus b, negative 1 equals 1 times 8 plus b, negative 9 equals b, y equals x minus 9.

2. y minus 3 equals one-half times the quantity x minus 10, y minus 3 equals one-half x minus 5, y equals one-half x minus 2.

3. The slope of the given equation is 2. A perpendicular line will have a slope that is the negative reciprocal. M equals negative one-half.

4. Parallel lines have the same slope. m = 5

5. Plug the point into the equation. Y equals 3 x plus 1, 5 equals 3 times 4 plus 1, 5 equals 12 plus 1 5 equals 13. Not true, so (4, 5) is not a solution and is not on the line.

6. The perpendicular slope will be the negative reciprocal of 4, or negative one-fourth. y equals m x plus b, 7 equals negative one-fourth times 12 plus b, 7 equals negative 3 plus b, 10 equals b. The new equation is y equals negative one-fourth x plus 10.