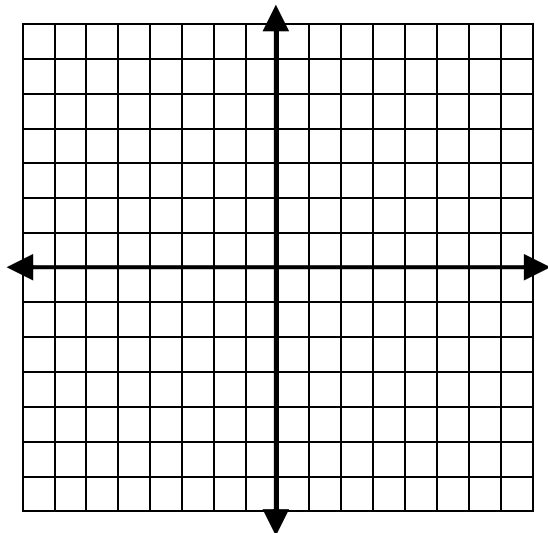


Essential Question: How do we write the equation of a line from a table and verbal description?

Do Now:

What is the equation of the line that passes through the point $(3, -1)$ and has a slope of 2?

Hint: Graph the line first!



Writing the Equation of a Line using an Algebraic Approach

Step 1: Find the slope of the line

Step 2: Substitute the slope and one of the points (x, y) into $y = mx + b$

Step 3: Solve for b (y-intercept)

Step 4: Write the equation in slope-intercept form ($y = mx + b$)

Example: From the information given in the Do Now, write the equation of the line algebraically.

1) Represent the equation of a line that passes through the coordinates (2,0) and (0,3).

2) Represent the equation of the line that passes through the coordinates (-3,7) and (3,3).

3) Write the equation of a line that is parallel to $4y = 4x - 20$ and passes through the point (-6,-3).

4) Write the equation of a line that runs through the points listed in the table below.

x	y
13	45
14	50
15	55
16	60



We can represent a linear relationship with an equation if we know the _____
and _____. With this information, we can write the equation
in _____ form (*slope-intercept form*).

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- 1) Represent the equation of a line that is perpendicular to the line with the equation $2x + 3y = 6$ and has the same y-intercept as $y = -x - 5$.
- 2) Represent the equation of the line that passes through the points $(-1,5)$ and $(3,-3)$.
- 3) Represent the equation of a line that is parallel to a line with the equation $4x + 8y = -16$ and passes through the point $(2,1)$.
- 4) Represent the equation of a line with an x-intercept of -2 and a y-intercept of 3 .

5) Write the equation of a line that runs through the points listed in the table below.

x	y
5	-1
7	0
9	1
11	2