Lines Worksheet 2

Name: _____

Line Facts:

Slope is the ratio of the rise (the change in y) over the run (the change in x)

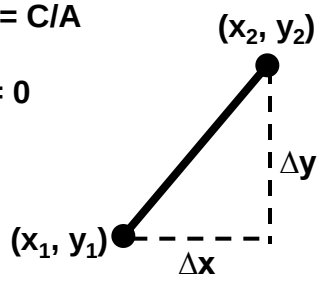
$$\textit{Slope} = m = \frac{\text{rise}}{\text{run}} = \frac{\Delta y}{\Delta x} = \frac{y_2 - y_1}{x_2 - x_1} = \frac{\text{distance up (+) or down (-)}}{\text{distance right (+) or left (-)}}$$

Slope-Intercept Form: $y = mx + b$ where m is the slope and b is the y-intercept

Point-Slope Form: $y - y_1 = m(x - x_1)$ of $y - k = m(x - h)$ for point (h, k)

Standard Form: $Ay + Bx = C$

slope = -B/A and y-intercept = C/A



To find the y-intercept set x = 0 and solve for y =

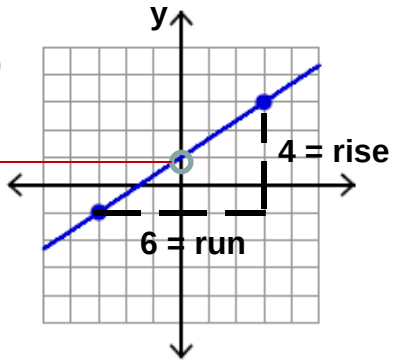
To find the x-intercept set y = 0 and solve for x =

Parallel lines have the same slope ($m_1 = m_2$)

Perpendicular lines have negative reciprocal slopes ($m_1 \times m_2 = -1$)

Find the information off of the following graphs:

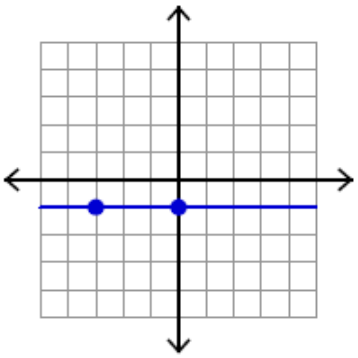
1)



m = 4/6

y-intercept = 1

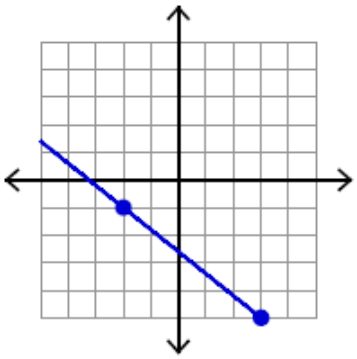
3)



m = ___

y-intercept = ____

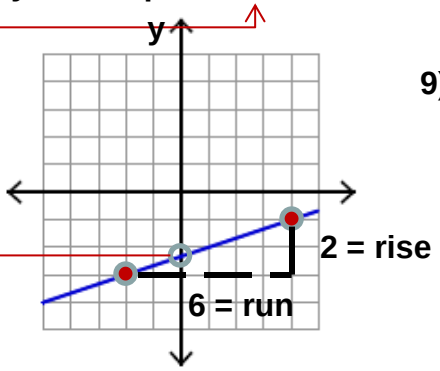
5)



m = ___

y-intercept = ____

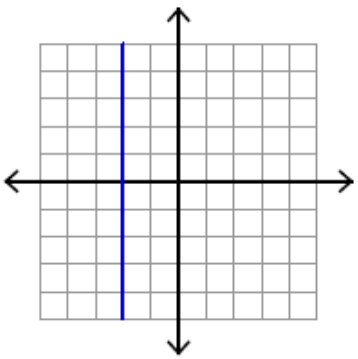
7)



m = 2/6

y-intercept = -2.3

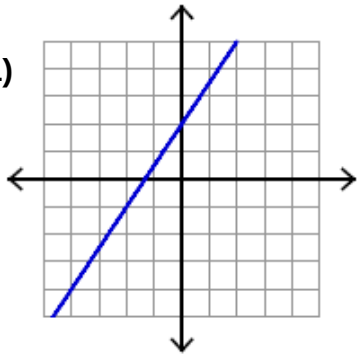
9)



m = ___

x-intercept = _____

11)



m = ___

y-intercept = ___

Find the slope from the following pairs of points:

13) (9, −6), (−1, −7) m = 1/10

$$\frac{-6 - -7}{9 - -1} = \frac{1}{10}$$

$$m = \frac{y_2 - y_1}{x_2 - x_1}$$

14) (1, −1), (−2, −3) m = _____

15) (−4, 2), (−6, −4) m = 3

$$\frac{-4 - 2}{-6 - -4} = \frac{-6}{-2}$$

16) (2, 4), (9, 6) m = _____

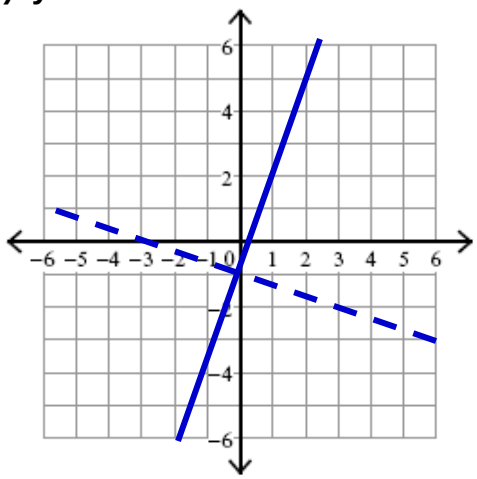
What is the slope of the perpendicular lines to questions15 and 16?

17) ⊥ to 15 : m = -1/3 Flip and negate

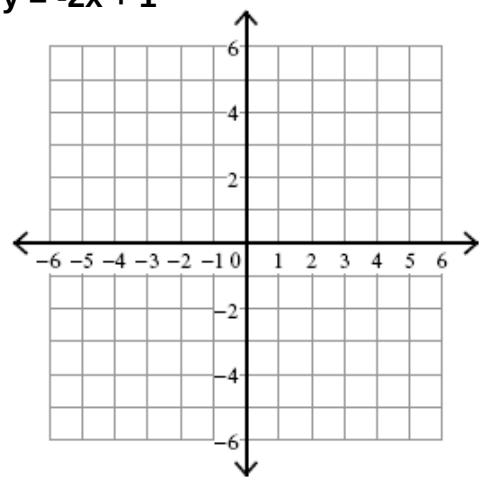
18) ⊥ to 16 : m = _____

Graph the following lines on the graphs given as solid (_____) lines:

19) y = 3x - 1



20) y = -2x + 1



21) Graph the perpendiculars to the line as a dashed (- - - - - -) line.

Find the slope from the following equations of the line:

23) 3x – 12 = y Already in y = mx + b format

m = 3

24) 14 – 2x = y

m = _____

25) 8*x* + 20 = 4*y* 8x + 20 = 4y

2x + 5 = y

m = 2

26) 21 – x = 3y

m = _____

What is the slope of the perpendicular lines to questions 25 and 26?

27) ⊥ to 25 : m = -1/2 Flip and negate

28) ⊥ to 26 : m = _____