

Bellwork Alg 2A Wednesday, October 19, 2016

1. Given this equation: $y = \frac{2}{7}x - 13$

- Write the equation of the line that is Parallel to this line and passes through the point $(-9, 11)$.
- Write the equation of the line that is Perpendicular to this line and passes through the point $(6, -1)$.

2. Given this equation: $x = 4$

- Write the equation of the line that is Parallel to this line and passes through the point $(-3, 5)$.
- Write the equation of the line that is Perpendicular to this line and passes through the point $(16, -23)$.

3. Determine if each pair of lines is Parallel, Perpendicular, or Neither.

a. $y = 1.6x + 3$

b. $y = 7x - 1$

c. $y = 3x$

$y = -0.625x + 3$

$7x + y = 11$

$18x - 6y = 4$

d. $24x - 8y = 72$

e. $x = 7$

f. $y = 4x + 20$

$y - 6 = 3(x - 5)$

$y = 1$

$2x - 8y = 32$

4. Write the equation of each line.

- The line has a slope of zero and passes through the point $(-6, 14)$.
- The line passes through the points $(4, 1)$ & $(8, -6)$.
- The line passes through the points $(-3, 8)$ & $(-3, 10)$

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1. Given this equation: $y = \frac{2}{7}x - 13$

a. Write the equation of the line that is Parallel to this line and passes through the point $(-9, 11)$.

Same Slope:
 $m = \frac{2}{7}$
 $(-9, 11)$

$$y - 11 = \frac{2}{7}(x + 9)$$

or

$$y = \frac{2}{7}x + \frac{95}{7}$$

b. Write the equation of the line that is Perpendicular to this line and passes through the point $(6, -1)$.

opposite reciprocal
 slope: $m = -\frac{7}{2}$
 $(6, -1)$

$$y + 1 = -\frac{7}{2}(x - 6)$$

or

$$y = -\frac{7}{2}x + 20$$

2. Given this equation: $x = 4 \rightarrow$ VERTICAL LINE

a. Write the equation of the line that is Parallel to this line and passes through the point $(-3, 5)$.

VERTICAL \rightarrow $x = -3$

b. Write the equation of the line that is Perpendicular to this line and passes through the point $(16, -23)$.

HORIZONTAL \rightarrow $y = -23$

3. Determine if each pair of lines is Parallel, Perpendicular, or Neither.

a. $y = 1.6x + 3$

$y = -0.625x + 3$

$(1.6)(-0.625) = -1$

slopes are
 opposite reciprocals

PERPENDICULAR

b. $y = 7x - 1$ $m = 7$

$7x + y = 11$

$\rightarrow y = 11 - 7x$ $m = -7$

Neither

c. $y = 3x$

$18x - 6y = 4$

$\rightarrow y = \frac{4 - 18x}{-6} = -\frac{2}{3} + 3x$

$m = 3$
 $b = -\frac{2}{3}$

parallel

d. $24x - 8y = 72$

$y - 6 = 3(x - 5)$

$\rightarrow y = \frac{72 - 24x}{-8} = -9 + 3x$

$y - 6 = 3x - 15$
 $+6$ $+6$

$y = 3x - 9$

NEITHER
 same line

e. $x = 7$ VERTICAL

$y = 1$ HORIZONTAL

PERPENDICULAR

f. $y = 4x + 20$ $m = 4$

$2x - 8y = 32$

$\rightarrow y = \frac{32 - 2x}{-8}$

$y = -4 + \frac{1}{4}x$ $m = \frac{1}{4}$

Neither

4. Write the equation of each line.

a) The line has a slope of zero and passes through the point $(-6, 14)$.

Horizontal \rightarrow $y = 14$

b) The line passes through the points $(4, 1)$ & $(8, -6)$.

$m = \frac{1 - (-6)}{4 - 8} = -\frac{7}{4}$

$y - 1 = -\frac{7}{4}(x - 4)$
 or $y + 6 = -\frac{7}{4}(x - 8)$
 or $y = -\frac{7}{4}x + 8$

c) The line passes through the points $(-3, 8)$ & $(-3, 10)$

VERTICAL \rightarrow $x = -3$