

REVIEW-LINEAR EQUATIONS AND PARALLEL AND PERPENDICULAR LINES

Find the slope, the  $\parallel$  slope, and the  $\perp$  slope

1. A(-4, 3) and B(-2, -6)

$m = -\frac{9}{2}$  ;  $\parallel m = -\frac{9}{2}$  ;  $\perp m = \frac{2}{9}$

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

$$m = \frac{-6 - 3}{-2 - (-4)}$$

$$m = -\frac{9}{2}$$

2. What is the slope of a vertical line? Undefined A horizontal line? 0

Find the slope of the line from the equation given

3.  $y = -\frac{2}{3}x + 4$   $-\frac{2}{3}$  4.  $y - 6 = 2(x + 3)$  2 5.  $3x - 2y = 10$   $\frac{3}{2}$

6.  $7x + 14y = 2$   $-\frac{1}{2}$  7.  $x = 3$  Undefined 8.  $y = 4$  0  
*vert. line* *horizontal line*

$m = -\frac{7}{14} = -\frac{1}{2}$       ⑤  $m = -\frac{3}{-2} = \frac{3}{2}$

$ax + by = c$        $m = -\frac{a}{b}$

$y = mx + b$   
 $y - y_1 = m(x - x_1)$

Write the equation in ~~slope~~ ~~intercept~~ form given the indicated information

*pt. - slope*

9. through (-4, 3) and (-2, -6)

$$m = \frac{-6 - 3}{-2 - (-4)} = \frac{-9}{2}$$

$$y - y_1 = m(x - x_1)$$

$$y - 3 = \frac{-9}{2}(x - (-4))$$

$$y - 3 = \frac{-9}{2}(x + 4)$$

10. through (1, 5) and || to  $y = -\frac{1}{4}x + 3$

$$m = -\frac{1}{4}$$

$$|| (m = \frac{-1}{4})$$

$$y - 5 = -\frac{1}{4}(x - 1)$$

11. through (3, -8) and  $\perp$

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

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

$$y - (-8) = \frac{-2}{3}(x - 3)$$

$$y + 8 = \frac{-2}{3}(x - 3)$$

12. through (2, 1) and || to  $y = 4$

*horiz // horiz*

$$y = 1$$

13. through (2, 1) and  $\perp$  to  $x = 3$   
 horizontal  $\perp$  vert. line  
 $y = 1$

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

Get slope from equation

$ax + by = c$	$y = \bullet x + b$
$\bullet = -\frac{a}{b}$	$y - y_1 = \bullet (x - x_1)$

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Vertical line  $m = \text{undefined}$   
 EQ:  $x = c$

Horizontal line  $m = 0$   
 EQ:  $y = c$

parallel lines — same slope

perpendicular lines — neg. reciprocal slopes