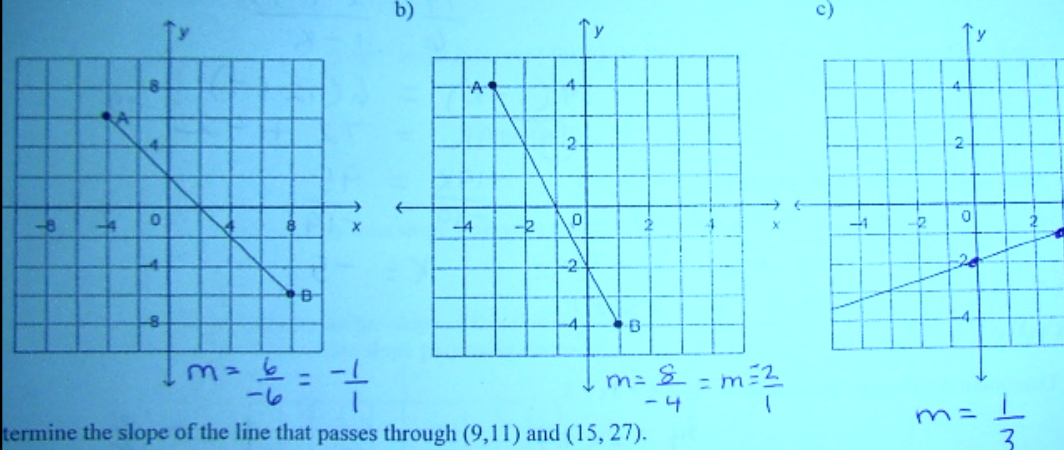


**Slope Review** *Answer Key*

Determine the slope of this line segment.

b) 

Determine the slope of the line that passes through (9, 11) and (15, 27).

Determine the slope of the line that passes through (9,11) and (15, 27).  $m = \frac{1}{3}$

$$m = \frac{y_2 - y_1}{x_2 - x_1} = \frac{27 - 11}{15 - 9} = \frac{16}{6} = \frac{8}{3}$$

The slopes of two lines are  $\frac{6}{11}$  and  $-11/6$ . Are the two lines parallel, perpendicular, or neither?

The slopes of two lines are  $-2$  and  $-1/2$ . Are the two lines parallel, perpendicular, or neither?

Complete the chart:

Equation	Slope	y-intercept
a) $y = 4x - 2$	4	-2
b) $-y = 5x - 2$ $y = -5x + 2$	-5	2
c) $2y - 3 = 8x - 5 + 3$ $2y = 8x - 2$ $y = 4x - 1$	4	-1
d) $3(x + 1) = 2x + 0$		

<p>d) <math>3(y+1) = 2x+9</math>  <math>3y+3 = 2x+9-3</math>  <math>3y = 2x+6</math>  <math>y = \frac{2}{3}x+2</math></p>	<p><math>\frac{2}{3}</math></p>	<p>2</p>
<p>e) <math>\frac{1}{2}y + \frac{1}{2} = 2x+1</math>  <math>y+1 = 4x+2-1</math>  <math>y = 4x-2</math></p>	<p>4</p>	<p>-2</p>
<p>f) <math>3x+5 = 2y-5+5</math>  <math>3x+10 = 2y</math>  <math>\frac{3}{2}x+5 = y</math></p>	<p><math>\frac{3}{2}</math></p>	<p>5</p>
<p>g) <math>-5y-1 = 10x-20</math>  <math>-5y = 10x-19</math>  <math>y = -2x + \frac{19}{5}</math></p>	<p>-2</p>	<p><math>\frac{19}{5}</math></p>

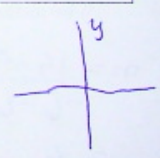
6. a) The slope parallel to the x-axis is  $\frac{0}{1}$ .

b) The slope perpendicular to the x-axis is  $\frac{1}{0}$ .

c) The slope of a vertical line is  $\frac{1}{0}$ .

d) The slope of a horizontal line is  $\frac{0}{1}$ .

e) The perpendicular slope to 5 is  $-\frac{1}{5}$ .



$-5y = 10x - 19$ $y = -2x + 19/5$	$-2$	$19/5$
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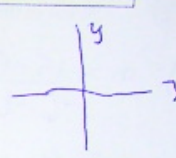
6. a) The slope parallel to the x-axis is  $\frac{0}{1}$ .

b) The slope perpendicular to the x-axis is  $\frac{1}{0}$ .

c) The slope of a vertical line is  $\frac{1}{0}$ .

d) The slope of a horizontal line is  $\frac{0}{1}$ .

e) The perpendicular slope to  $\frac{5}{1}$  is  $-\frac{1}{5}$ .



Determine the *slope* and the *y*-intercept for the graph of this equation:  $16x + 32 - 2y = 0$  ( $y=mx+b$ )

$m = 8$

$y\text{-int} = 16$

$16x + 32 = 2y$

$8x + 16 = y$

8. Find the value of K. (K, -7) and (1, 12)  $m = 19/6$ .

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

$$\frac{19}{6} = \frac{12 - (-7)}{1 - K}$$

$$19(1 - K) = 6(12 + 7)$$

$$\textcircled{19} - 19K = 72 + 42 \quad -19$$

$$\frac{-19K}{-19} = \frac{95}{-19}$$

$$K = -5$$

9. Determine the slope parallel to  $3(2y - 1) = 12x + 3$

$$6y - 3 = 12x + 3$$

$$6y = 12x + 6$$

$$y = 2x + 1$$

$m = 2$   
parallel =  $2/1$

11. A line passes through points  $(4, 8f)$  and  $(2f, -2)$ . If the slope is parallel to the y-axis, find  $f$ .

$$\frac{1}{0} = \frac{-2 - 8f}{2f - 4}$$

$$\left| \frac{1}{0} \right|$$

$$\begin{aligned} 1(2f - 4) &= 0 \\ 2f - 4 &= 0 \\ 2f &= 4 \\ f &= 2 \end{aligned}$$

12. A line passes through points  $(-3k, 2)$  and  $(8, k)$ . If the slope is parallel to the x-axis, find  $k$ .

$$\frac{0}{1} = \frac{k - 2}{8 - (-3k)}$$

$$\frac{0}{1}$$

$$\begin{aligned} 1(k - 2) &= 0(8 + 3k) \\ k - 2 &= 0 \\ k &= 2 \end{aligned}$$

13.  $k = 2$   
 A line passes through points  $(5, 6k)$  and  $(-3, 4k)$ . If the slope is perpendicular to  $1/3$ , find  $k$ .  

$$\frac{-3}{1} = \frac{4k - 6k}{-3 - 5}$$

$$1(4k - 6k) = -3(-3 - 5)$$

$$4k - 6k = +9 + 15$$

$$-2k = 24$$

$$k = -12$$

14. A line passes through  $R(6, 9)$  and  $K(-6, 15)$ .

- What is the slope of line  $RK$ ?
- What is the parallel slope?
- What is the perpendicular slope?

a)  $m = \frac{15 - 9}{-6 - 6}$   
 $= \frac{6}{-12}$   
 $= -\frac{1}{2}$

b) parallel  
 same  
 $-\frac{1}{2}$

c) Perpendicular  
 $+\frac{2}{1}$

15. Find the slope perpendicular to  $(6, 4)$  and  $(-2, 8)$

14. A line passes through R(6, 9) and K(-6, 15).  $k = -12$

a) What is the slope of line RK?  
 $m = \frac{15-9}{-6-6} = \frac{6}{-12} = -\frac{1}{2}$

b) What is the parallel slope?  
 parallel same  $-\frac{1}{2}$

c) What is the perpendicular slope?  
 Perpendicular  $+\frac{2}{1}$

15. Find the slope perpendicular to (5, 4) and (-9, 5)

$m = \frac{5-4}{-9-5} = \frac{1}{-14}$

$\frac{1}{1} = +\frac{14}{1}$