

Slope Review *Answer Key*

Determine the slope of this line segment.

a) $m = \frac{y_2 - y_1}{x_2 - x_1} = \frac{-2 - 6}{2 - (-4)} = \frac{-8}{6} = -\frac{4}{3}$

b) $m = \frac{y_2 - y_1}{x_2 - x_1} = \frac{-4 - 4}{1 - (-3)} = \frac{-8}{4} = -2$

c) $m = \frac{1}{3}$

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

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

The slopes of two lines are $\frac{0}{11}$ 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) $3(y + 1) = 2x + 9$ $3y + 3 = 2x + 9 - 3$ $3y = 2x + 6$ $y = \frac{2}{3}x + 2$ | $\frac{2}{3}$ | 2 |
| e) $1/2y + 2 = 2x + 1$ $y + 4 = 4x + 2 - 4$ $y = 4x - 2$ | 4 | -2 |
| f) $3x + 5 = 2y - 5 + 5$ $3x + 10 = 2y$ $\frac{3}{2}x + 5 = y$ | $\frac{3}{2}$ | 5 |

| | | |
|---|----|--------|
| g) $-5y - 1 = 10x - 20$ $-5y = 10x - 19$ $y = -2x + 19/5$ | -2 | $19/5$ |
|---|----|--------|

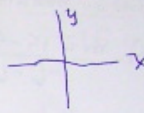
6. a) The slope parallel to the x-axis is $0/1$.

b) The slope perpendicular to the x-axis is $1/0$.

c) The slope of a vertical line is $1/0$.

d) The slope of a horizontal line is $0/1$.

e) The perpendicular slope to 5 is $-1/5$.



7. 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 $(1, 12)$ $m = 19/6$.

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

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

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

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

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

$$K = -5$$

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

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

$$6y = 12x + 6$$

$$y = 2x + 1$$

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

10. Determine the slope perpendicular to $3y - 4 = 8x + 5$

$$3y = 8x + 9$$

$$y = \frac{8}{3}x + 3$$

$m = \frac{8}{3} \perp -\frac{3}{8}$

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

$$\frac{1}{0} = \frac{-2 - 8f}{2f - 4} \quad \left| \frac{1}{0} \right.$$

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

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

$$\frac{0}{1} = \frac{k - 2}{8 - (-3k)} \quad \left| \frac{0}{1} \right.$$

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

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

$$\frac{-3}{1} = \frac{4k - 6k}{-3 - 5} \quad \left| \frac{-3}{1} \right.$$

$$\begin{aligned} 1(4k - 6k) &= -3(-3 - 5) \\ 4k - 6k &= +9 + 15 \\ -2k &= 24 \\ k &= -12 \end{aligned}$$

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

$$1(k-2) = 0(8+3k)$$

$$k-2 = 0$$

$$k = 2$$

13. A line passes through points (5, 6k) and (-3, 4k). If the slope is perpendicular to $\frac{1}{3}$, find k.

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

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

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

$$-2k = 24$$

$$k = -12$$

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

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 (6, 4) and (1, 9)

$$15. a) y = 8.95x + 50$$

$$b) \begin{aligned} y &= 8.95x + 50 \\ y &= 8.95(50) + 50 \\ y &= 447.50 + 50 \\ y &= 497.50 \end{aligned}$$

*It would cost \$497.50
for 50 T-shirts.*

$$c) \begin{aligned} y &= 8.95x + 50 \\ 971.85 &= 8.95x + 50 \\ \frac{921.85}{8.95} &= \frac{8.95x}{8.95} \end{aligned}$$

He ordered 103 T-shirts.

$$103 = x$$