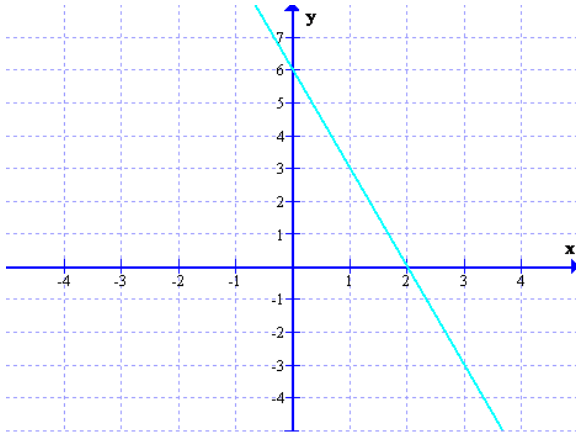
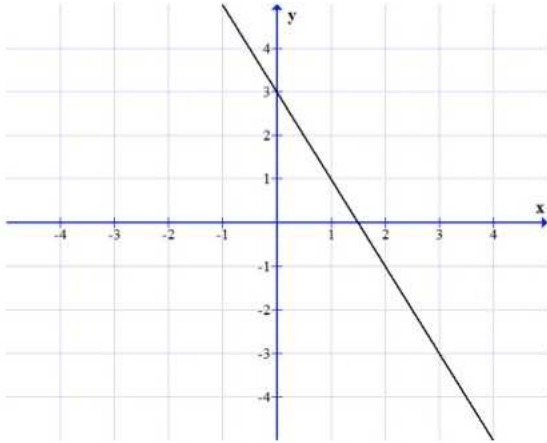


Section 3.1 Slope of a Line and Applications of Slope

1. What is the slope of the line shown in the graph below?



- (a) 3
(b) -3
(c) $\frac{1}{3}$
(d) $-\frac{1}{3}$
(e) This line has no slope.
2. What is the slope of the line that passes through the points $(0, 2)$ and $(-2, -4)$?
- (a) 1
(b) -1
(c) $\frac{1}{3}$
(d) 3
(e) Undefined
3. What is the slope of this line?
- (a) $\frac{1}{2}$
(b) 2



- (c) $\frac{-1}{2}$
- (d) -2

4. Calculate the slope of the line through the points (4, -3) and (1, 3).

- (a) 2
- (b) -2
- (c) $\frac{1}{2}$
- (d) $\frac{-1}{2}$

5. Calculate the slope of the line through the points (6, -8) and (6, 2).


- (a) 10
- (b) $\frac{1}{10}$
- (c) 0
- (d) undefined


6. True or False: All vertical lines have slope 0.


- (a) True, and I am very confident
- (b) True, but I am not very confident
- (c) False, but I am not very confident
- (d) False, and I am very confident

7. What does this line look like $2x + 1 = 7$?

(a) horizontal 

(b) vertical 

(c) up and to the right 

(d) down and to the right 

8. Which of the following functions represents a linear function with slope 3 and y -intercept -4 ?

(a) $y = -4x + 3$

(b) $y = 3x - 4$

(c) $y - 2 = 3(x - 2)$

(d) Both (a) and (b)

(e) Both (b) and (c)

9. Which equation describes the linear function that has slope 3 and x -intercept 4?

(a) $y = 3x + 4$

(b) $y = 4x + 3$

(c) $y = 3x - 12$

(d) $y = 3x + 12$

10. The relationship between the latitude L of a city in the Northern Hemisphere and its average annual temperature T is modeled by the function $T = -0.68L + 89.5$. The slope of this linear function means

(a) That temperature at the equator would be 89.5° .

(b) For every degree increase in latitude the average annual temperature increases by 89.5° .

(c) For every degree increase in latitude the average annual temperature increases by 0.68° .

(d) For every degree increase in latitude the average annual temperature decreases by 0.68° .

11. The relationship between the latitude L of a city in the Northern Hemisphere and its average annual temperature T is modeled by the function $T = -0.68L + 89.5$. The vertical intercept of this linear function means
- (a) That temperature at the equator would be 89.5° .
 - (b) For every degree increase in latitude the average annual temperature increases by 89.5° .
 - (c) That temperature at the equator would be -0.68° .
 - (d) For every degree increase in latitude the average annual temperature decreases by 0.68° .
12. Which equation describes a line that is parallel to the graph of $y = -2x + 4$?
- (a) $y = \frac{1}{2}x - 3$
 - (b) $y = 2x - 3$
 - (c) $y = \frac{1}{2}x + 4$
 - (d) $y = -\frac{1}{2}x - 3$
 - (e) $y = -2x - 3$
13. Are the given lines parallel, perpendicular, or neither?
Line 1: $2x + 4y = 12$
Line 2: $2x - x = 4$
- (a) parallel
 - (b) perpendicular
 - (c) neither
14. Which equation describes a line that is perpendicular to the graph of $y = -2x + 4$?
- (a) $y = -\frac{1}{2}x - 3$
 - (b) $y = 2x - 3$
 - (c) $y = -\frac{1}{2}x + 4$
 - (d) $y = \frac{1}{2}x - 3$
 - (e) $y = -2x - 3$
15. Find the equation of the line that passes through the point $(1, 4)$ and is perpendicular to the line given by $3x - 2y = 6$.

$$(a) y = \frac{3}{2}x + \frac{5}{2}$$

$$(b) y = \frac{3}{2}x - \frac{11}{2}$$

$$(c) y = -\frac{2}{3}x + \frac{14}{3}$$

$$(d) y = -\frac{2}{3}x - \frac{10}{3}$$