Name: KEY Date: Period:

4.1-4.4 Review Worksheet

Find the x and y intercepts of the equation.

1. $x + y = 5$
   a. X-intercept: (5, 0)
   b. Y-intercept: (0, 5)

$x+0=5$ → $x=5$

$0+y=5$ → $y=5$

3. $3x + y = 15$
   a. X-intercept: (5, 0)
   b. Y-intercept: (0, 15)

$3x+0=15$ → $3x=15$ → $x=5$

$3(0)+y=15$ → $y=15$

2. $x - 3y = 9$
   a. X-intercept: (9, 0)
   b. Y-intercept: (0, -3)

$x-3(0)=9$ → $x=9$

$0-3y=9$ → $-3y=9$ → $y=-3$

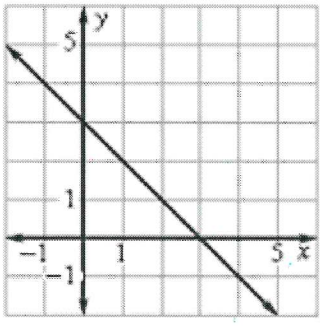
4. $y = \frac{1}{2}x + 6$
   a. X-intercept: (-12, 0)
   b. Y-intercept: (0, 6)

$y=\frac{1}{2}(0)+6$ → $y=6$

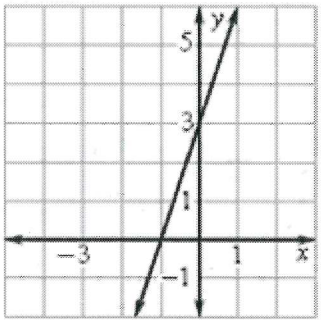
$0=\frac{1}{2}x+6$ → $-6=\frac{1}{2}x$ → $x=-12$

Use the graph to find the x-intercept and the y-intercept of the line.

5.
   a. X-intercept: 3
   b. Y-intercept: 3

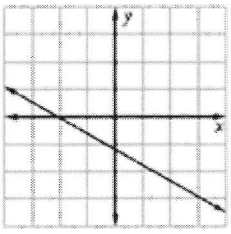


6.
   a. X-intercept: −1
   b. Y-intercept: 3

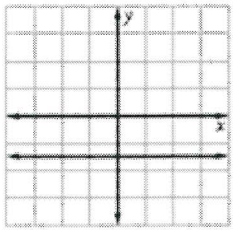


State whether the slope of the line is *positive, negative, zero, or undefined.*

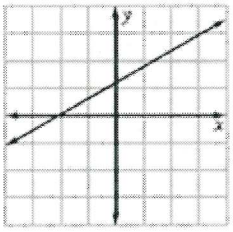
7. negative



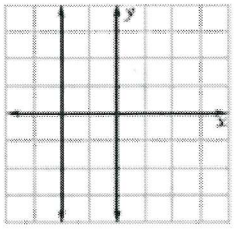
9. zero



8. positive



10. undefined



Find the slope of the line that passes through the given points.

11. $(3, 7)$ *and* $(-9, -5)$

$m = \frac{-5-7}{-9-3}$

$m = \frac{-12}{-12} = 1$

12. $(-2, 3)$ *and* $(4, -1)$

$m = \frac{-1-3}{4--2} = \frac{-4}{6} = \frac{-2}{3}$

13. $(-5, 2)$ *and* $(2, -4)$

$m = \frac{-4-2}{2--5} = \frac{-6}{7}$

14. $(1, 5)$ *and* $(2, 9)$

$m = \frac{9-5}{2-1} = \frac{4}{1} = 4$

15. $(2, 4)$ *and* $(1, 1)$

$m = \frac{1-4}{1-2} = \frac{-3}{-1} = 3$

16. $(9, -6)$ *and* $(3, -6$

$m = \frac{-6--6}{3-9} = \frac{0}{-6} = 0$

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Tell whether each set of ordered pairs satisfies a linear function. Explain.

17. { (-3, 10), (-1, 9), (1, 7), (3, 4), (5, 0) }

No, y's aren't constant

18. { (3, 4), (5, 7), (7, 10), (9, 13), (11, 16) }

Yes, both x's and y's have a constant change.

Tell whether each function is linear or not. Explain how you know.

19. y = 3 - 2x

Yes. Can be written in standard form.

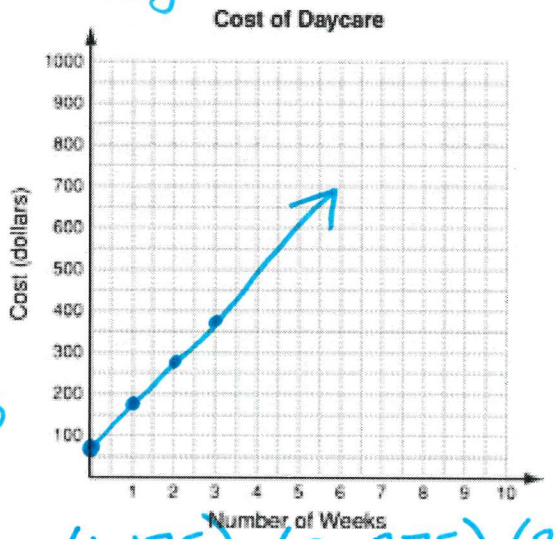
20. xy + 5 = 10

No. x and y are multiplied together.

. A daycare center charges a $75 enrollment fee plus $100 per week. The function $f(x) = 100x + 75$ gives the cost of daycare for x weeks. Graph this function and give its domain and range.

Domain: $x \geq 0$

Range: $y \geq 75$



$f(x) = 100(0) + 75$

$f(x) = 75$

$0 = 100x + 75$

$-75 = 100x$

$-0.75 = x$

(1, 175) (2, 275) (3, 375)

The table shows the number of bikes made by a company for certain years. Find the rate of change for each time period. During which time period did the number of bikes increase at the fastest rate?

Year	1	2	5	7	11
Bikes	32	35	47	47	61

$\frac{35-32}{2-1} = \frac{3}{1} = 3$

$\frac{47-47}{7-5} = \frac{0}{2} = 2$

$\frac{47-35}{5-2} = \frac{12}{3} = 4$

$\frac{61-47}{11-7} = \frac{14}{4} = 3.5$

Between year 2 & 5

The graph shows the distance of an elevator at Chimney Rock, North Carolina, from its destination as a function of time. Use the graph to answer questions 3–6. Select the best answer.

3. What is the *x*-intercept of this function?

   A 0 C 258

   B 30 D 300

4. What does the *x*-intercept represent?

   F the total distance the elevator travels

   G the number of seconds that have passed for any given distance

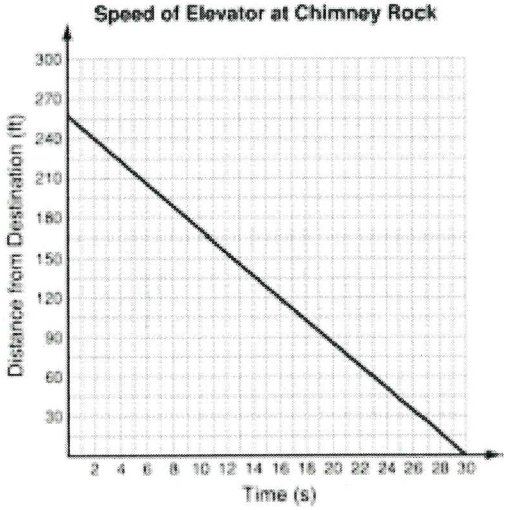
   H the number of seconds it takes the elevator to reach its destination

   J the distance that the elevator has traveled at any given time

5. What is the *y*-intercept for this function?

   A 0 C 258

   B 30 D 300



6. What does the *y*-intercept represent?

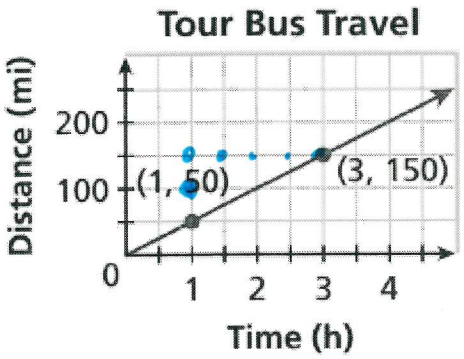
   F the total distance the elevator travels

   G the number of seconds that have passed for any given distance

   H the number of seconds it takes the elevator to reach its destination

   J the distance that the elevator has traveled at any given time

Find the slope of the line. Then tell what the slope represents.



$m = \frac{150 - 50}{3 - 1} = \frac{100}{2} = 50$

$\frac{100}{2} = 50$

The bus travels 50 miles in 1 hour