1.

Which graph represents the equation $x = -2$?

a.

c.

b.

d.
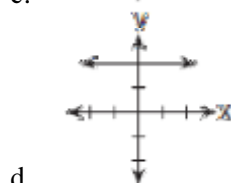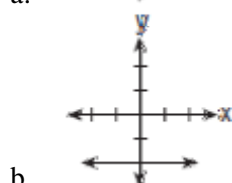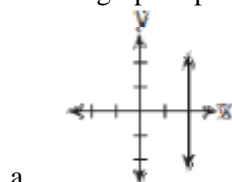
2.

Which relation is *not* a function?
a. $\{(1,5),(2,6),(3,6),(4,7)\}$
b. $\{(4,7),(2,1),(-3,6),(3,4)\}$
c. $\{(-1,6),(1,3),(2,5),(1,7)\}$
d. $\{(-1,2),(0,5),(5,0),(2,-1)\}$

3.

The formula for calculating a person's body mass index is $B=\dfrac{w}{h^2}$, for which w represents weight in kilograms and h represents height in meters. Solve this formula for w.

a. $w = Bh^2$

c. $w = \dfrac{B}{h^2}$

b. $w = B - h^2$

d. $w = (Bh)^2$

4.

If a line is horizontal, its slope is
a. 1
b. 0
c. undefined
d. negative

5.

It costs $80 to buy an air conditioner and about $0.40 per minute to run it. Which equation models the total cost of using an air conditioner?
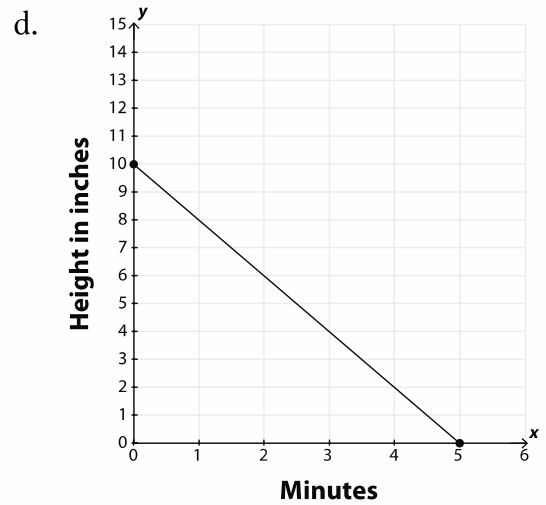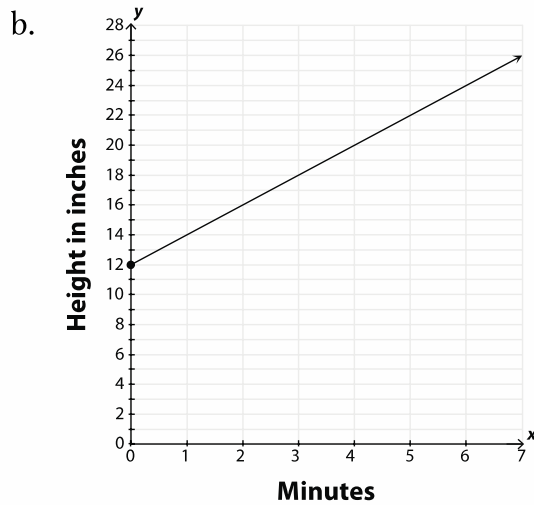
a. $x + y = 80.40$

c. $y = 80x + 0.40$

b. $y = 80.40x$

d. $y = 0.40x + 80$

6.

A 12-inch candle burns at a rate of 2 inches per hour. What is the graph of the equation that models the height of the candle over time?

a.

Height in inches

Minutes

c.

Height in inches

Minutes

b.

Height in inches

Minutes

d.

Height in inches

Minutes
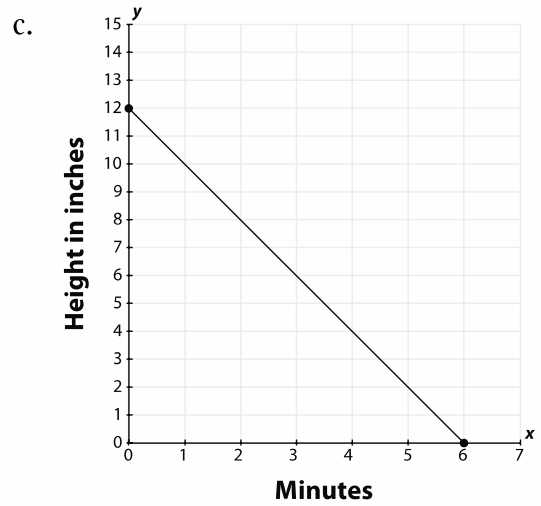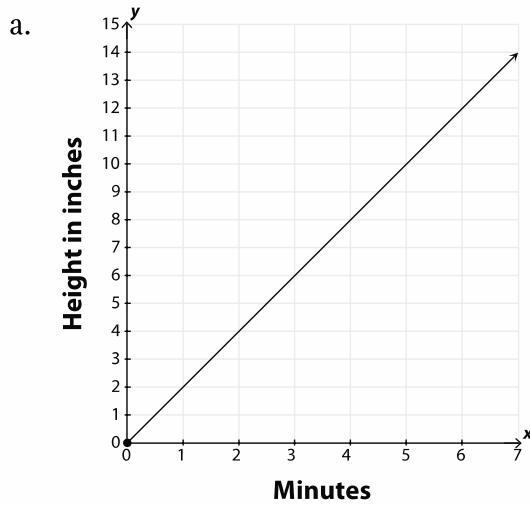
7.

Given the inequality $y \leq -3x + 6$, which point is NOT a solution?

a. $(1, -3)$

b. $(0, -2)$

c. $(-1, -9)$

d. $(2, 3)$

8.

What is the slope of the line that passes through the points $(-6, 1)$ and $(4, -4)$?

a. -2

b. 2

c. $-\dfrac{1}{2}$

d. $\dfrac{1}{2}$

9.

Identify the property of equality that justifies the missing step in solving the equation below.

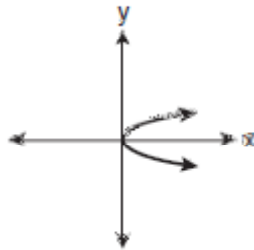| Equation	Steps
$23 = 2x - 9$	Original equation
$32 = 2x$	
$16 = x$	Division property of equality
$x = 16$	Symmetric property of equality

a. subtraction property of equality

b. addition property of equality

c. division property of equality

d. multiplication property of equality

10.

Which statement is true about the relation shown on the graph below?

a. It is a function because there exists one x-coordinate for each y-coordinate.

b. It is a function because there exists one y-coordinate for each x-coordinate.

c. It is *not* a function because there are multiple y-values for a given x-value.

d. It is *not* a function because there are multiple x-values for a given y-value.

11.

What is the solution to the equation $3x + 5(4x - 6) - 8 = 3x - 14$?

a. $x = 1$

b. $x = 1.7$

c. $x = 1.2$

d. There are no solutions to this equation.

12.

Which of the following is the slope of the line given by the equation $3x - 5y = 20$?

a) $-\dfrac{5}{3}$ b) $\dfrac{5}{3}$ c) $-\dfrac{3}{5}$ d) $\dfrac{3}{5}$

13.

Solve the equation $8x + 4y = 12$ for y.

a. $y = 2x - 3$

b. $y = -2x + 3$

c. $y = -3x + 2$

d. $y = 3x - 2$

14. What is the solution to the system $\begin{cases} 4x-6y=42 \\ x+6y=48 \end{cases}$?

    a. (5, 18)

    b. (18, 5)

    c. There are infinitely many solutions to this system of equations.

    d. There are no solutions to this system of equations.

15.

Which explicit function represents the pattern in the table below?

x	$f(x)$
0	32
1	21
2	10
3	−1
4	−12

  a. $f(x) = 11x + 32$ c. $f(x) = -11x + 32$

  b. $f(x) = 11x$ d. $f(x) = 32 \bullet 11^x$

16. If $f(x) = 3x - 5$ and the domain of f is {2, 4, 6}, what is the range of $f(x)$?

    a. {11, 17, 20}   c. {2, 4, 6}

    b. {−6, −4, −2}   d. {1, 7, 13}

17.
What is $f(-2)$ for $f(x) = 5 - 2x$?

    a) $5 + 4x$ b) 1   c) 9   d) $-10 + 4x$

18. How does increasing the slope in a linear function change the graph of the line?

    a. The line rises more steeply.   c. The y-intercept increases.

    b. The line is less steep.   d. The y-intercept decreases.

19.
What is an equation of the line that passes through the point (3, -1) and has a slope of 2?

  a. $y = 2x + 5$
  b. $y = 2x - 1$
  c. $y = 2x - 4$
  d. $y = 2x - 7$

20. Show work on paper (bubble sheet)

     Your car broke down, and the final bill was $261.50. The part that was replaced cost $99, and the charge for the mechanic's labor is $65 per hour. Write an equation to model this situation, then solve the equation for the number of hours the mechanic worked on your car.