8.F.4

1. The graph below models the cost of holding a banquet at the Tea Room restaurant.
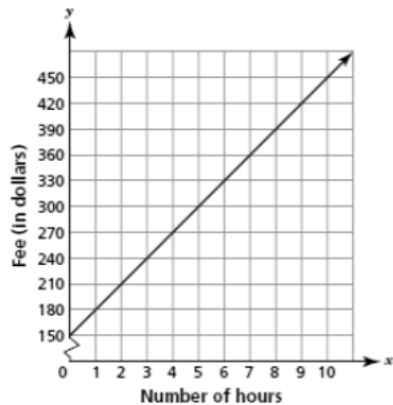
What is the initial fee and cost per hour to hold a banquet at the Tea Room?

    A. fee: $30, cost per hour: $120   C. fee: $120, cost per hour: $30

    B. fee: $30, cost per hour: $150   D. fee: $150, cost per hour: $30

2. Elvira wants to predict how much her cable television service will cost each month. She pays a fee of $69.99 each month for service and $4.99 for each movie she orders. She let x represent the number of movies she watches each month and y represent the total cost for her cable service. Which equation can she use to predict how much she will pay each month?

    A. $y = 74.98 + x$ C. $y = 69.99 + 4.99x$

    B. $y = 4.99 + 69.99x$ D. $y = 69.99 - 4.99x$

3. A two-mile taxi ride costs $3.90. A five-mile ride in the same taxi costs $7.50. If x represents the miles driven and y represents the cost in dollars, which linear equation models the cost of a taxi ride?

    A. $y = 1.5 + 1.2x$ C. $y = 3.6 + 3x$

    B. $y = -1.25 + 1.2x$ D. $y = 1.2 + 1.5x$

4. What is the rate of change and initial value of the linear function modeled by a line passing through the points (0, 8) and (3, -1)?

    A. Rate of change: -3; initial value: 8   C. Rate of change: 8; initial value: 3

    B. Rate of change: -3; initial value: -8   D. Rate of change: 8; initial value: -3

5. The table models the amount of cold medicine Meg took on each of 3 days. What is the rate of change?

Day	Amount (mg)
1	60
2	50

6. A restaurant hostess is paid $50 plus 10% of the waitstaff's tips for each night she works. If y represents her pay each night and x represents the waitstaff's tips, which equation models this relationship?

A. $y = 50.1 + x$

C. $y = 50 + 0.1x$

B. $y = 0.1 + 50x$

D. $y = 50.1x$

7. Mr. Richards gave the table shown below to four of his students and asked them to determine the y-intercept of the function.

x	y
-4	0
-2	-1
4	-4

Luis answered -8, Natasha answered -6, Grayson answered -2, and Kaylee answer -1. Which student answered **correctly**?

A. Luis

C. Grayson

B. Natasha

D. Kaylee

8. The cost to rent a paddleboat at the city park includes an initial fee of $7.00, plus $3.50 per hour. Which equation models the relationship between the total cost, y, and the number of hours, x, that the paddleboat is rented?

A $y = 3.5x + 7$

B $y = 7x + 3.5$

C $y = \frac{x}{7} + 3.5$

D $y = \frac{x}{3.5} + 7$

9. Ms. Gibson made an initial deposit of $500 when opening a bank account. After the initial deposit, she deposited the same amount of money each month. The table below shows the total amount of money, a, she deposited into the account after a certain number of months, t, since opening it.

	Total Amount Depo i
4	$1,500
8	$2,500
10	$3,000
13	$3,750

Which equation models the relationship between a and t?

A $a = 250t$

B $a = 500t$

C $a = 250t + 500$

D $a = 500t + 250$

10. A car traveled 36 miles in 45 minutes. The car traveled at a constant speed. If the car continues to travel at this rate, which equation can be used to determine y, the total number of miles the car will travel, in x hours?

A $y = 48x$

B $y = x + 48$

C $48y = x$

D $48 + y = x$

11. A crane is lowering a concrete block from a height of 270 feet above the ground at a constant rate of 2.5 feet per second. Which function can be used to determine h, the height, in feet, above the ground of the concrete block after s seconds?

A $h = 270s + 2.5$

B $h = 2.5s + 270$

C $h = 270 - 2.5s$

D $h = 2.5s - 270$

12. The relationship between temperature in degrees Fahrenheit and degrees Celsius is shown in the graph below.

TEMPERATURE CONVERSION
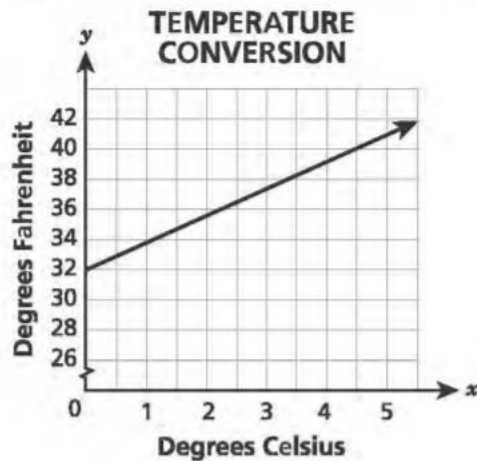
What is the meaning of the y-intercept?

A the change in degrees Fahrenheit for every change of one degree Celsius

B the change in degrees Celsius for every change of one degree Fahrenheit

C the temperature in degrees Fahrenheit when the temperature is zero degrees Celsius

D the temperature in degrees Celsius when the temperature is zero degrees Fahrenheit

13. This equation shows the amount of a candle that is left (in ounces) after burning for x hours. What is y-intercept for this function, and what does it represent?

$$y = 12 - 0.2x$$

A 12; the ounces burned each hour

B 12; the ounces in the candle before it burns

C −0.2; the ounces in the candle before it burns

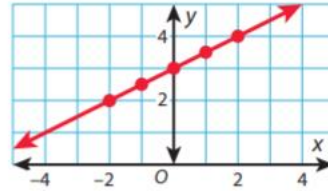**D** −0.2; the ounces of the candle that burn each hour

14. Which equation describes the function shown in the table?

x	−2	−1	0	1	2
y	−5	−2	1	4	7

A $y = 2x + 1$

B $y = \frac{1}{3}x + 1$

C $y = 3x + 1$

D $y = 3x$

15. What are the slope and y-intercept of this graph?

A slope $= 0.5$, y-intercept $= 3$

B slope $= 3$, y-intercept $= 0.5$

C slope $= 0.5$, y-intercept $= 0$

D slope $= 1$, y-intercept $= 3$

16. A trainer for a soccer team keeps track of the amount of water players consume during practice. The trainer observes that the average amount of water consumed by the team is a linear function of the temperature. The graph and equation for this function are shown.

Which of the following statements is true?

A For every degree increase in temperature, the average amount of water consumed increases by 0.0875 gallons.

B When the temperature is below 74 degrees, the team consumes no water.

C When the temperature is 90 degrees, the team consumes somewhere between 7 gal and 7.2 gal of water.

D The amount of water consumed by the team decreases by 0.45 gallons for every degree the temperature falls.
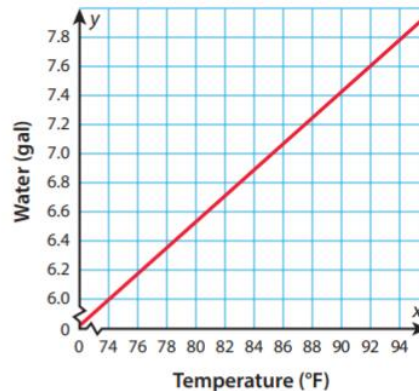
Temperature (°F)

$w = 0.0875t - 0.45$, where w represents the average amount of water consumed, and t represents the temperature on that day.

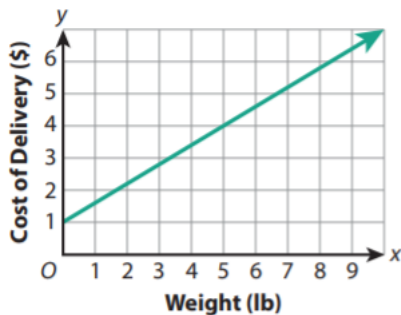**17.** Through which pairs of points is the slope negative?

A $(3, 6)$ and $(10, 6)$

B $(-2, -5)$ and $(0, 0)$

C $(1, 9)$ and $(20, 3)$

D $(16, 11)$ and $(14, 9)$

18. Which equation describes the function shown in the table?

x	−2	−1	0	1	2
y	−1	2	5	8	11

A $y = x + 5$

19. The cost of having a package delivered by Quick Bicycle Delivery is a function of the weight of the package. The graph of this function is shown.

Tell whether each statement is *True* or *False*.

a. When the weight is greater than 15 pounds, the cost will be greater than $10. ☐ True ☐ False

b. An equation that represents this graph is $y = x + 0.6$. ☐ True ☐ False

c. The slope is 1. ☐ True ☐ False

d. The cost of delivery decreases by $0.60 for each pound the weight decreases. ☐ True ☐ False

20. The lines passing through which pairs of points have a positive *y*-intercept? Select all that apply.

A $(-3, 10)$ and $(1, 2)$

B $(-1, 6)$ and $(0, 2)$

C $(1, 2)$ and $(3, 4)$

D $(0, -4)$ and $(3, -2)$

E $(3, 1)$ and $(5, 2)$