

#1

ID: 3d1070c9

The function f is defined by $f(x) = 25x + 30$. What is the value of $f(x)$ when $x = 2$?

- A) 50
- B) 57
- C) 80
- D) 110

#2

ID: bd9eb2b5

The function f is defined by $f(x) = 8x$. For what value of x does $f(x) = 72$?

- A) 8
- B) 9
- C) 64
- D) 80

#3

ID: 1480dd5c

$$f(x) = 4x + b$$

For the linear function f , b is a constant and $f(7) = 28$. What is the value of b ?

- A) 0
- B) 1
- C) 4
- D) 7

#4

ID: 0d6ab461

Gabriella deposits \$ 35 in a savings account at the end of each week. At the beginning of the 1st week of a year there was \$ 600 in that savings account. How much money, in dollars, will be in the account at the end of the 4th week of that year?

- A) 460
- B) 635
- C) 639
- D) 740

#5

ID: 520c8177

A veterinarian recommends that each day a certain rabbit should eat 25 calories per pound of the rabbit's weight, plus an additional 11 calories. Which equation represents this situation, where c is the total number of calories the veterinarian recommends the rabbit should eat each day if the rabbit's weight is x pounds?

- A) $c = 25x$
- B) $c = 36x$
- C) $c = 11x + 25$
- D) $c = 25x + 11$

#6

ID: 88e13c8c

The total cost $f(x)$, in dollars, to lease a car for 36 months from a particular car dealership is given by $f(x) = 36x + 1,000$, where x is the monthly payment, in dollars. What is the total cost to lease a car when the monthly payment is \$ 400 ?

- A) \$ 13,400
- B) \$ 13,000
- C) \$ 15,400
- D) \$ 37,400

#7

ID: 3a3b95df

$$d = 16 - \frac{x}{30}$$

The equation shown gives the estimated amount of diesel d , in gallons, that remains in the gas tank of a truck after being driven x miles, where $0 \leq x \leq 480$. What is the estimated amount of diesel, in gallons, that remains in the gas tank of the truck when $x = 300$?

- A) 0
- B) 6
- C) 14
- D) 16

#8

ID: 84664a7c

The front of a roller-coaster car is at the bottom of a hill and is 15 feet above the ground. If the front of the roller-coaster car rises at a constant rate of 8 feet per second, which of the following equations gives the height h , in feet, of the front of the roller-coaster car s seconds after it starts up the hill?

- A) $h = 8s + 15$
- B) $h = 15s + \frac{335}{8}$
- C) $h = 8s + \frac{335}{15}$
- D) $h = 15s + 8$

#9

ID: 06fc1726

If f is the function defined by $f(x) = \frac{2x-1}{3}$, what is the value of $f(5)$?

- A) $\frac{4}{3}$
- B) $\frac{7}{3}$
- C) 3
- D) 9

#10

ID: 6863c7ce

$$d = 16t$$

The given equation represents the distance d , in inches, where t represents the number of seconds since an object started moving. Which of the following is the best interpretation of 16 in this context?

- A) The object moved a total of 16 inches.
- B) The object moved a total of $16t$ inches.
- C) The object is moving at a rate of 16 inches per second.
- D) The object is moving at a rate of $\frac{1}{16}$ inches per second.

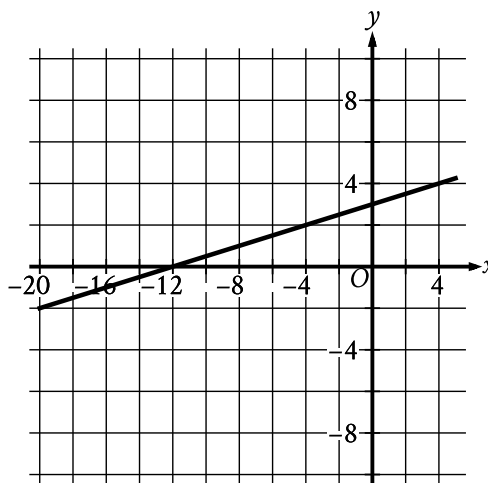
#11

ID: 0b332f00

The function g is defined by $g(x) = 6x$. For what value of x is $g(x) = 54$?

#12

ID: c10ad793

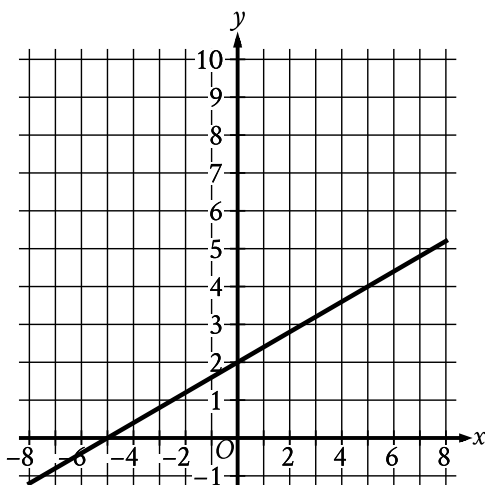


The graph of the linear function f is shown, where $y = f(x)$. What is the x -intercept of the graph of f ?

- A) $(-12, 0)$
- B) $(0, 0)$
- C) $(\frac{1}{4}, 0)$
- D) $(12, 0)$

#13

ID: d11910d6



The graph of the linear function f is shown. What is the y -intercept of the graph of $y = f(x)$?

- A) $(-5, 0)$
- B) $(2, 0)$
- C) $(0, 2)$
- D) $(0, -5)$

#14

ID: 0eae6be1

The number y is 84 less than the number x . Which equation represents the relationship between x and y ?

- A) $y = x + 84$
- B) $y = \frac{1}{84}x$
- C) $y = 84x$
- D) $y = x - 84$

#15

ID: 361f97c7

The function f is defined by $f(x) = 4x - 3$. What is the value of $f(10)$?

- A) -30
- B) 37
- C) 40
- D) 43

#16

ID: 447fa970

The function f is defined by the equation $f(x) = 7x + 2$. What is the value of $f(x)$ when $x = 4$?

#17

ID: 27198699

As part of a science project on evaporation, Amaya measured the height of a liquid in a container over a period of time. The function $f(x) = 33 - 0.18x$ gives the estimated height, in centimeters (cm), of the liquid in the container x days after the start of the project. Which of the following is the best interpretation of 33 in this context?

- A) The estimated height, in cm, of the liquid at the start of the project
- B) The estimated height, in cm, of the liquid at the end of the project
- C) The estimated change in the height, in cm, of the liquid each day
- D) The estimated number of days for all of the liquid to evaporate

#18

ID: a130fcdd

$$g(x) = 11x + 4$$

For the given linear function g , which table shows three values of x and their corresponding values of $g(x)$?

A)

x	$g(x)$
-1	7
0	11
1	15

B)

x	$g(x)$
-1	-4
0	0
1	4

C)

x	$g(x)$
-1	-7
0	4
1	15

D)

x	$g(x)$
-1	-11
0	0
1	11

#19

ID: bf36c815

The function g is defined by $g(x) = -x + 8$. What is the value of $g(0)$?

A) -8

B) 0

C) 4

D) 8

#20

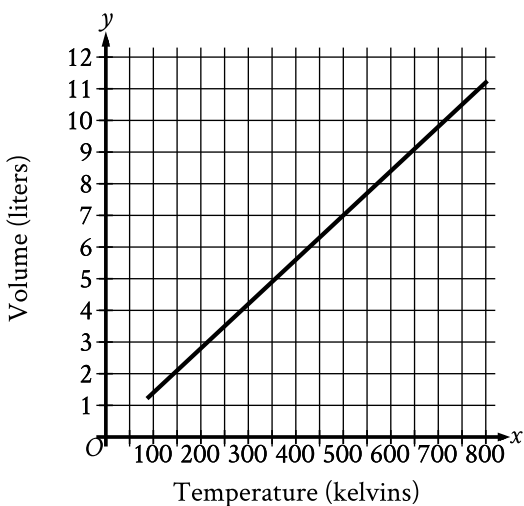
ID: 0d391910

The function f is defined by $f(x) = 4x$. For what value of x does $f(x) = 8$?

#21

ID: 930c2990

Hydrogen is placed inside a container and kept at a constant pressure. The graph shows the estimated volume y , in liters, of the hydrogen when its temperature is x kelvins.



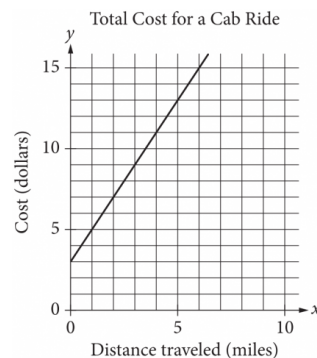
What is the estimated volume, in liters, of the hydrogen when its temperature is 500 kelvins?

- A) 0
- B) $\frac{7}{500}$
- C) 7
- D) $\frac{500}{7}$

#22

ID: 3f5375d9

The line graphed in the xy -plane below models the total cost, in dollars, for a cab ride, y , in a certain city during nonpeak hours based on the number of miles traveled, x .



According to the graph, what is the cost for each additional mile traveled, in dollars, of a cab ride?

- A) \$2.00
- B) \$2.60
- C) \$3.00
- D) \$5.00

#23

ID: 1d18794b

A contract for a certain service requires a onetime activation cost of \$ 35 and a monthly cost of \$ 23 . Which equation represents this situation, where c is the total cost, in dollars, of this service contract for t months?

- A) $c = \frac{t}{23} + 35$
- B) $c = \frac{t}{35} + 23$
- C) $c = 23t + 35$
- D) $c = 35t + 23$

#24

ID: b51c173d

For the linear function f , the graph of $y = f(x)$ in the xy -plane has a slope of 2 and has a y -intercept at $(0, -5)$. Which equation defines f ?

- A) $f(x) = \frac{1}{2}x - 5$
- B) $f(x) = -\frac{1}{2}x - 5$
- C) $f(x) = -2x - 5$
- D) $f(x) = 2x - 5$

#25

ID: 4702da8f

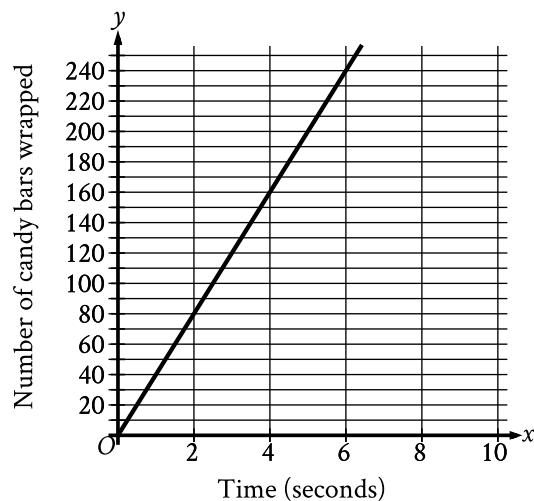
The function f is defined by $f(x) = 80 - 6x$. What is the value of $f(7)$?

- A) 13
- B) 38
- C) 74
- D) 81

#26

ID: 13294295

The graph shown models the number of candy bars a certain machine wraps with a label in x seconds.

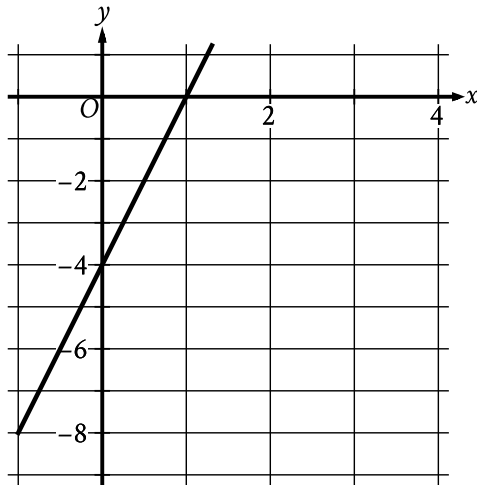


According to the graph, what is the estimated number of candy bars the machine wraps with a label per second?

- A) 2
- B) 40
- C) 78
- D) 80

#27

ID: 33e4af6b



The graph of the function f is shown, where $y = f(x)$. What is the y-intercept of the graph?

- A) (0, -1)
- B) (0, -4)
- C) (0, 1)
- D) (0, 4)

#28

ID: 7b17f86a

$$f(x) = x + \frac{8}{11}$$

The function f is defined by the given equation. What is the value of $f(x)$ when $x = \frac{3}{11}$?

#29

ID: adf60b28

$$f(x) = 8x + 4$$

The function f gives the estimated height, in feet, of a willow tree x years after its height was first measured. Which statement is the best interpretation of 4 in this context?

- A) The tree will be measured each year for 4 years.
- B) The tree is estimated to grow to a maximum height of 4 feet.
- C) The estimated height of the tree increased by 4 feet each year.
- D) The estimated height of the tree was 4 feet when it was first measured.

#30

ID: b8cbe394

Sean rents a tent at a cost of \$ 11 per day plus a onetime insurance fee of \$ 10. Which equation represents the total cost c , in dollars, to rent the tent with insurance for d days?

- A) $c = 11(d + 10)$
- B) $c = 10(d + 11)$
- C) $c = 11d + 10$
- D) $c = 10d + 11$

#31

ID: 12983c1e

x	$f(x)$
1	5
3	13
5	21

Some values of the linear function f are shown in the table above. Which of the following defines f ?

- A) $f(x) = 2x + 3$
 B) $f(x) = 3x + 2$
 C) $f(x) = 4x + 1$
 D) $f(x) = 5x$

#32

ID: aeaba0b6

$$f(x) = 14 + 4x$$

The function f represents the total cost, in dollars, of attending an arcade when x games are played. How many games can be played for a total cost of \$ 58 ?

#33

ID: 70d9516e

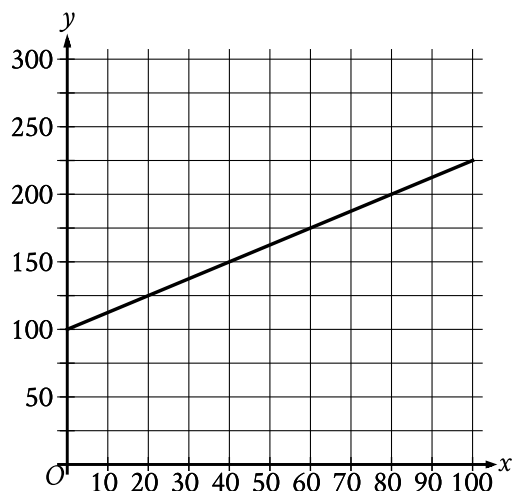
A bus is traveling at a constant speed along a straight portion of road. The equation $d = 30t$ gives the distance d , in feet from a road marker, that the bus will be t seconds after passing the marker. How many feet from the marker will the bus be 2 seconds after passing the marker?

- A) 30
 B) 32
 C) 60
 D) 90

#34

ID: 720e51ac

The cost y , in dollars, for a manufacturer to make x rings is represented by the line shown.



What is the cost, in dollars, for the manufacturer to make 60 rings?

- A) 100
 B) 125
 C) 175
 D) 225

#35

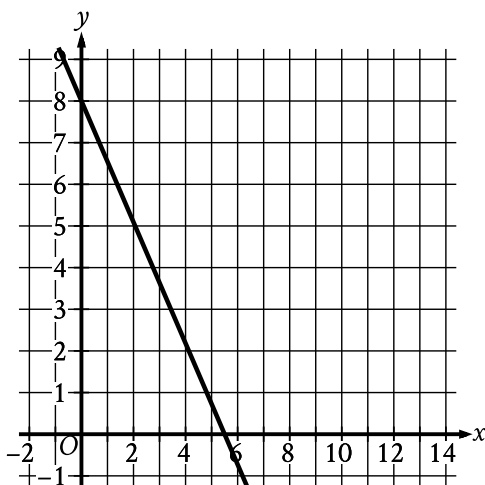
ID: 4e97f862

The function f is defined by $f(x) = 3x - 8$. What is the value of $f(7)$?

- A) 29
 B) 13
 C) -5
 D) -29

#36

ID: 3174f07d



The graph of the linear function f is shown, where $y = f(x)$. What is the y -intercept of the graph of f ?

- A) $(0, 0)$
- B) $(0, -\frac{16}{11})$
- C) $(0, -8)$
- D) $(0, 8)$

#37

ID: f79fffb

The function h is defined by $h(x) = 3x - 7$. What is the value of $h(-2)$?

- A) -13
- B) -10
- C) 10
- D) 13

#38

ID: a9039591

x	$f(x)$
0	29
1	32
2	35

For the linear function f , the table shows three values of x and their corresponding values of $f(x)$. Which equation defines $f(x)$?

- A) $f(x) = 3x + 29$
- B) $f(x) = 29x + 32$
- C) $f(x) = 35x + 29$
- D) $f(x) = 32x + 35$

#39

ID: a396ed75

For a training program, Juan rides his bike at an average rate of 5.7 minutes per mile. Which function m models the number of minutes it will take Juan to ride x miles at this rate?

- A) $m(x) = \frac{x}{5.7}$
- B) $m(x) = x + 5.7$
- C) $m(x) = x - 5.7$
- D) $m(x) = 5.7x$

#40

ID: e4a588ca

The function f is defined by $f(x) = \frac{1}{2}(x + 6)$. What is the value of $f(4)$?

- A) 20
- B) 12
- C) 10
- D) 5

#43

ID: bf883fde

For the function f , the graph of $y = f(x)$ in the xy -plane has a slope of 3 and passes through the point $(0, -8)$. Which equation defines f ?

- A) $f(x) = 3x$
- B) $f(x) = 3x - 8$
- C) $f(x) = 3x + 5$
- D) $f(x) = 3x + 11$

#41

ID: 2e379126

The function g is defined by $g(x) = 4x - 6$. What is the value of $g(-7)$?

- A) -34
- B) -22
- C) $-\frac{13}{4}$
- D) $-\frac{1}{4}$

#44

ID: 3462d850

Marisol drove 3 hours from City A to City B. The equation below estimates the distance d , in miles, Marisol traveled after driving for t hours.

$$d = 45t$$

Which of the following does 45 represent in the equation?

- A) Marisol took 45 trips from City A to City B.
- B) The distance between City A and City B is 45 miles.
- C) Marisol drove at an average speed of about 45 miles per hour.
- D) It took Marisol 45 hours to drive from City A to City B.

#42

ID: 979b0b8d

For the linear function f , the graph of $y = f(x)$ in the xy -plane has a slope of 39 and passes through the point $(0, 0)$. Which equation defines f ?

- A) $f(x) = -39x$
- B) $f(x) = \frac{1}{39}x$
- C) $f(x) = x - 39$
- D) $f(x) = 39x$

#45

ID: fe6f9678

For the linear function f , $f(0) = 17$ and $f(1) = 17$. Which equation defines f ?

- A) $f(x) = \frac{1}{17}$
- B) $f(x) = 1$
- C) $f(x) = 17$
- D) $f(x) = 34$

#46

ID: bc638f2d

The function f defined by $f(t) = 14t + 9$ gives the estimated length, in inches, of a vine plant t months after Tavon purchased it. Which of the following is the best interpretation of 9 in this context?

- A) Tavon will keep the vine plant for 9 months.
- B) The vine plant is expected to grow 9 inches each month.
- C) The vine plant is expected to grow to a maximum length of 9 inches.
- D) The estimated length of the vine plant was 9 inches when Tavon purchased it.

#47

ID: c4d49134

$$s = 40 + 3t$$

The equation gives the speed s , in miles per hour, of a certain car t seconds after it began to accelerate. What is the speed, in miles per hour, of the car 5 seconds after it began to accelerate?

- A) 40
- B) 43
- C) 45
- D) 55

#48

ID: 255996a6

$$T = 1,000 + 18h$$

In the equation above, T represents Brittany's total take-home pay, in dollars, for her first week of work, where h represents the number of hours she worked that week and 1,000 represents a sign-on bonus. If Brittany's total take-home pay was \$1,576, for how many hours was Brittany paid for her first week of work?

- A) 16
- B) 32
- C) 55
- D) 88

#49

ID: a1696f3e

The function g is defined as $g(x) = 5x + a$, where a is a constant. If $g(4) = 31$, what is the value of a ?

- A) 30
- B) 22
- C) 11
- D) -23

#51

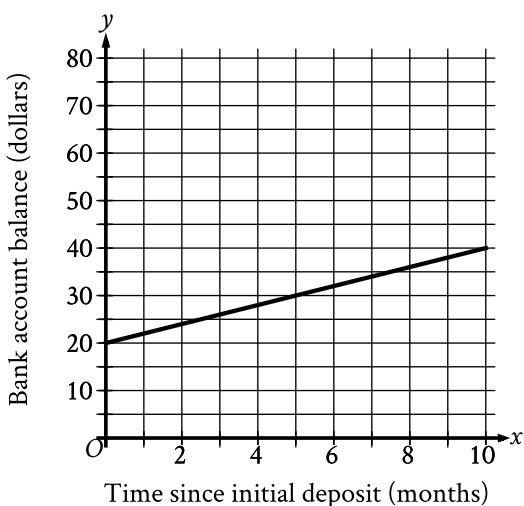
ID: 13909d78

The function f is defined by the equation $f(x) = 100x + 2$. What is the value of $f(x)$ when $x = 9$?

- A) 111
- B) 118
- C) 900
- D) 902

#50

ID: 2ecce641



A bank account was opened with an initial deposit. Over the next several months, regular deposits were made into this account, and there were no withdrawals made during this time. The graph of the function f shown, where $y = f(x)$, estimates the account balance, in dollars, in this bank account x months since the initial deposit. To the nearest whole dollar, what is the amount of the initial deposit estimated by the graph?

#52

ID: de6fe450

On January 1, 2015, a city's minimum hourly wage was \$9.25. It will increase by \$0.50 on the first day of the year for the next 5 years. Which of the following functions best models the minimum hourly wage, in dollars, x years after January 1, 2015, where $x = 1, 2, 3, 4, 5$?

- A) $f(x) = 9.25 - 0.50x$
- B) $f(x) = 9.25x - 0.50$
- C) $f(x) = 9.25 + 0.50x$
- D) $f(x) = 9.25x + 0.50$

#53

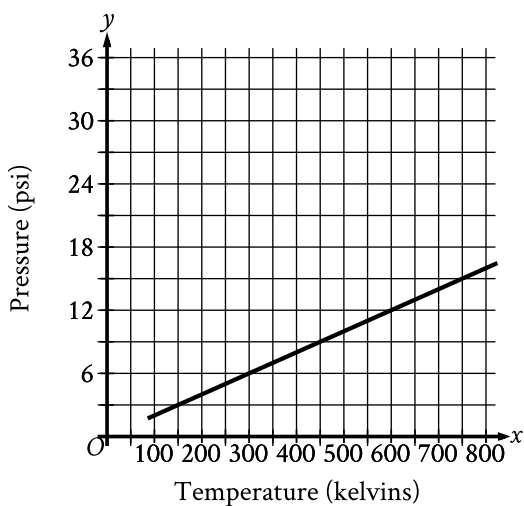
ID: 4f89e4d4

A student council group is selling school posters for a fundraiser. They use the function $p(x) = 5x - 220$ to determine their profit $p(x)$, in dollars, for selling x school posters. In order to earn a profit of \$900, how many school posters must they sell?

#54

ID: d0cb49e8

Argon is placed inside a container with a constant volume. The graph shows the estimated pressure y , in pounds per square inch (psi), of the argon when its temperature is x kelvins.



What is the estimated pressure of the argon, in psi, when the temperature is 600 kelvins?

- A) 6
- B) 12
- C) 300
- D) 600

#55

ID: cee5b352

The length, y , of a white whale was 162 centimeters (cm) when it was born and increased an average of 4.8 cm per month for the first 12 months after it was born. Which equation best represents this situation, where x is the number of months after the whale was born and y is the length, in cm, of the whale?

- A) $y = 162x$
- B) $y = 162x + 162$
- C) $y = 4.8x + 4.8$
- D) $y = 4.8x + 162$

#56

ID: aad7e1b9

The function f is defined by $f(x) = \frac{1}{10}x - 2$. What is the y -intercept of the graph of $y = f(x)$ in the xy -plane?

- A) $(-2, 0)$
- B) $(0, -2)$
- C) $(0, \frac{1}{10})$
- D) $(\frac{1}{10}, 0)$

#57

ID: fe287f7e

To repair a refrigerator, a technician charges \$ 60 per hour for labor plus \$ 120 for parts. Which function f represents the total amount, in dollars, the technician will charge for this job if it takes x hours?

- A) $f(x) = x + 120$
- B) $f(x) = 60x$
- C) $f(x) = 60x + 120$
- D) $f(x) = 60x - 120$

#58

ID: 6efcc0a3

In the linear function h , $h(0) = 41$ and $h(1) = 40$. Which equation defines h ?

- A) $h(x) = -x + 41$
- B) $h(x) = -x$
- C) $h(x) = -41x$
- D) $h(x) = -41$

#59

ID: 776cfa7c

Hana deposited a fixed amount into her bank account each month. The function $f(t) = 100 + 25t$ gives the amount, in dollars, in Hana's bank account after t monthly deposits. What is the best interpretation of 25 in this context?

- A) With each monthly deposit, the amount in Hana's bank account increased by \$ 25.
- B) Before Hana made any monthly deposits, the amount in her bank account was \$ 25.
- C) After 1 monthly deposit, the amount in Hana's bank account was \$ 25.
- D) Hana made a total of 25 monthly deposits.

#60

ID: 73b5f330

The function f is defined by $f(x) = 5x + 8$. For what value of x does $f(x) = 58$?

- A) 10
- B) 13
- C) 50
- D) 298

#61

ID: 81390d6c

The function h is defined by $h(x) = x + 200$. What is the value of $h(50)$?

- A) 200
- B) 250
- C) 10,000
- D) 50,200

#62

ID: 2eef7e61

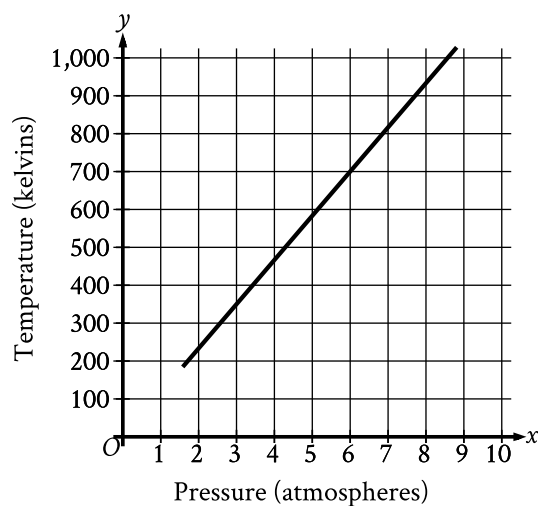
The graph of the function f is a line in the xy -plane. If the line has slope $\frac{3}{4}$ and $f(0) = 3$, which of the following defines f ?

- A) $f(x) = \frac{3}{4}x - 3$
- B) $f(x) = \frac{3}{4}x + 3$
- C) $f(x) = 4x - 3$
- D) $f(x) = 4x + 3$

#63

ID: 0ea7ef01

Oxygen gas is placed inside a tank with a constant volume. The graph shows the estimated temperature y , in kelvins, of the oxygen gas when its pressure is x atmospheres.



What is the estimated temperature, in kelvins, of the oxygen gas when its pressure is 6 atmospheres?

- A) 6
- B) 60
- C) 700
- D) 760

#64

ID: a232aa96

The function f is defined by $f(x) = -3x + 60$. What is the value of $f(x)$ when $x = -8$?

- A) 49
- B) 52
- C) 57
- D) 84

#65

ID: 1ecaa9c0

Robert rented a truck to transport materials he purchased from a hardware store. He was charged an initial fee of \$20.00 plus an additional \$0.70 per mile driven. If the truck was driven 38 miles, what was the total amount Robert was charged?

- A) \$46.60
- B) \$52.90
- C) \$66.90
- D) \$86.50

#66

ID: 8643d906

$$P(t) = 250 + 10t$$

The population of snow leopards in a certain area can be modeled by the function P defined above, where $P(t)$ is the population t years after 1990. Of the following, which is the best interpretation of the equation $P(30) = 550$?

- A) The snow leopard population in this area is predicted to be 30 in the year 2020.
- B) The snow leopard population in this area is predicted to be 30 in the year 2030.
- C) The snow leopard population in this area is predicted to be 550 in the year 2020.
- D) The snow leopard population in this area is predicted to be 550 in the year 2030.

#67

ID: a4d6fbec

If $y = 5x + 10$, what is the value of y when $x = 8$?

#68

ID: 5907e072

$$f(x) = x + b$$

For the linear function f , b is a constant. When $x = 0$, $f(x) = 30$. What is the value of b ?

- A) -30
- B) $-\frac{1}{30}$
- C) $\frac{1}{30}$
- D) 30

#69

ID: a73a5c22

The function g is defined by $g(x) = 10x + 8$. What is the value of $g(x)$ when $x = 8$?

- A) 0
- B) 8
- C) 10
- D) 88

#70

ID: 5ad6bc97

$$f(x) = 7x + 1$$

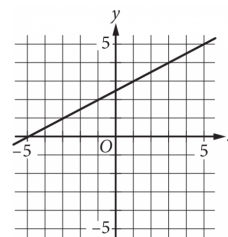
The function gives the total number of people on a company retreat with x managers. What is the total number of people on a company retreat with 7 managers?

#71

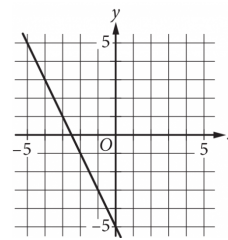
ID: a8e6bd75

Which of the following is the graph of the equation $y = 2x - 5$ in the xy -plane?

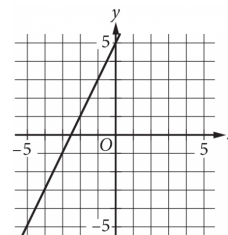
A)



B)



C)



D)

