Question ID 84664a7c

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Linear functions	■□□

ID: 84664a7c

1.1

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. $h = 15s + 8$

Question ID 06fc1726

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Linear functions	■□□

ID: 06fc1726

1.2

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

Question ID 6863c7ce

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Linear functions	■□□

ID: 6863c7ce

1.3

$$d = 16t$$

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.

Question ID bf36c815

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Linear functions	■□□

ID: bf36c815

1.4

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

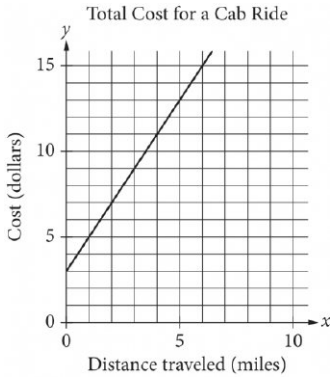
Question ID 3f5375d9

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Linear functions	■□□

ID: 3f5375d9

1.5

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

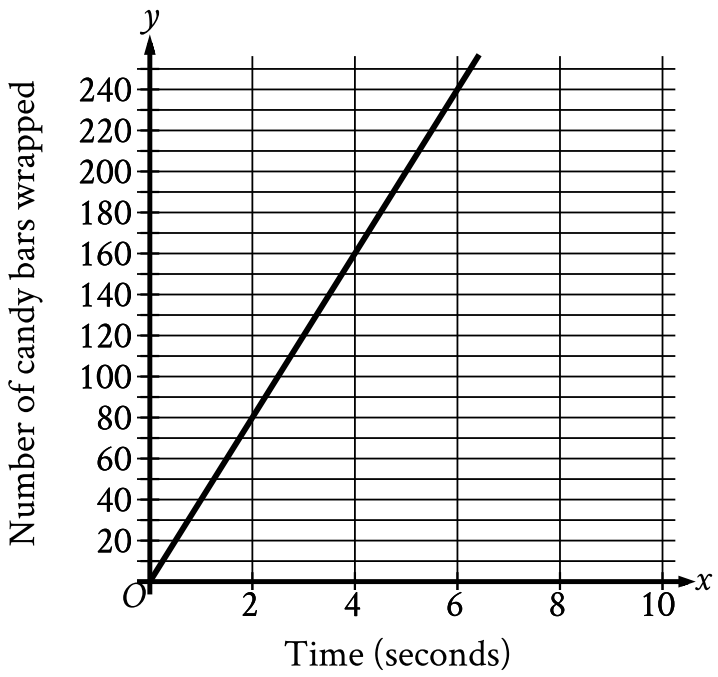
Question ID 13294295

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Linear functions	■□□

ID: 13294295

1.6

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

Question ID 12983c1e

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Linear functions	■□□

ID: 12983c1e

1.7

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. $f(x)=5x$

Question ID f79fffba

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Linear functions	■□□

ID: f79fffba

1.8

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

Question ID 3462d850

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Linear functions	■□□

ID: 3462d850

1.9

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.

Question ID 255996a6

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Linear functions	■□□

ID: 255996a6

1.10

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

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

Question ID a1696f3e

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Linear functions	■□□

ID: a1696f3e

1.11

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

Question ID 13909d78

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Linear functions	■□□

ID: 13909d78

1.12

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

Question ID de6fe450

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Linear functions	■□□

ID: de6fe450

1.13

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. $f(x) = 9.25x + 0.50$

Question ID cee5b352

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Linear functions	■□□

ID: cee5b352

1.14

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. $y = 4.8x + 162$

Question ID 81390d6c

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Linear functions	■□□

ID: 81390d6c

1.15

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. $50{,}200$

Question ID 2eef7e61

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Linear functions	■□□

ID: 2eef7e61

1.16

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. $f(x)=4x+3$

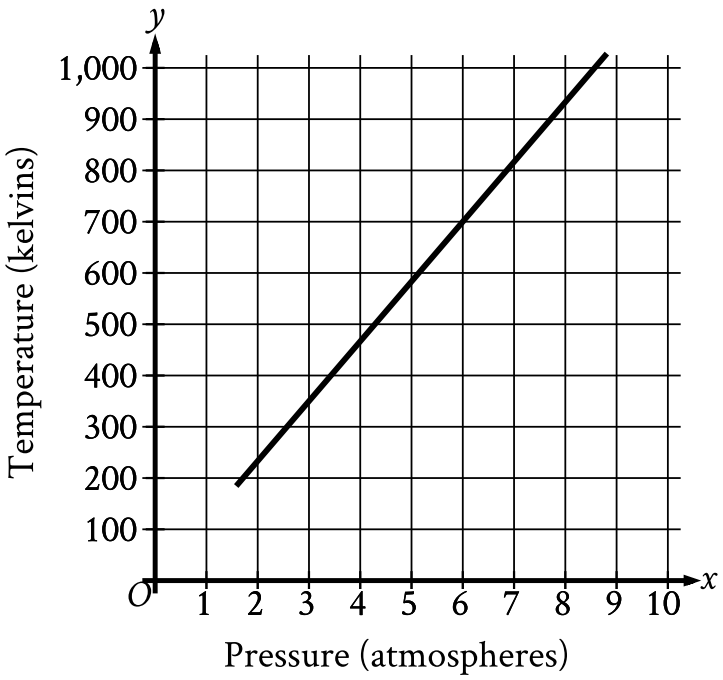
Question ID 0ea7ef01

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Linear functions	■□□

ID: 0ea7ef01

1.17

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

Question ID 1ecaa9c0

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Linear functions	■□□

ID: 1ecaa9c0

1.18

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

Question ID 8643d906

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Linear functions	■□□

ID: 8643d906

1.19

$P(t) = 250 + 10t$

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.

Question ID a8e6bd75

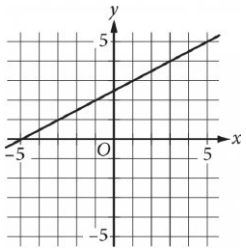
Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Linear functions	■□□

ID: a8e6bd75

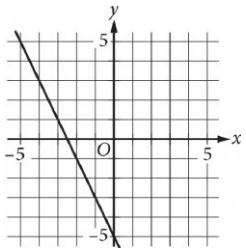
1.20

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

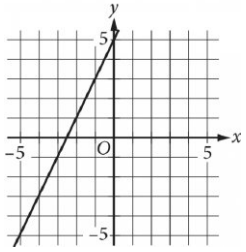
A.



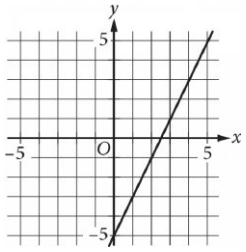
B.



C.



D.



Question ID fe6f9678

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Linear functions	■□□

ID: fe6f9678

1.21

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. $f(x) = 34$

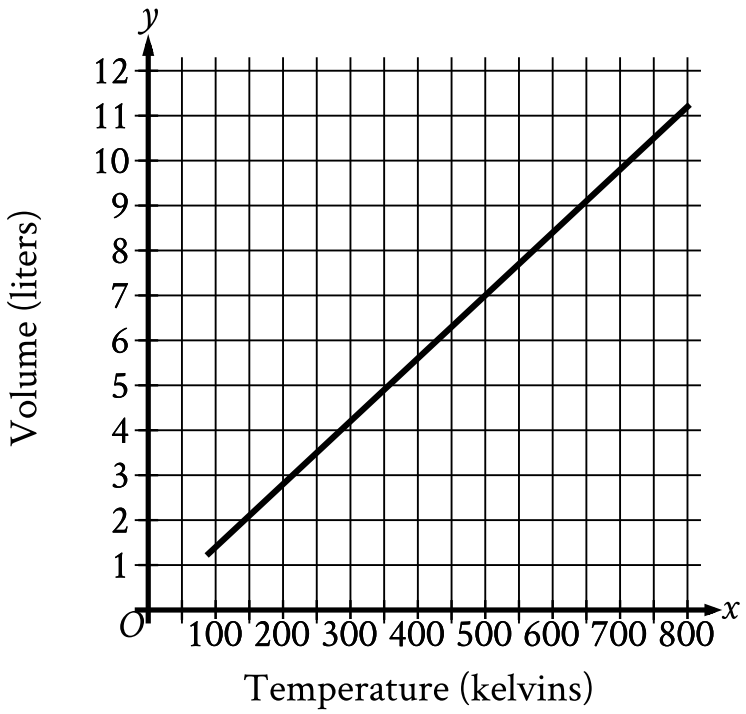
Question ID 930c2990

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Linear functions	■□□

ID: 930c2990

1.22

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

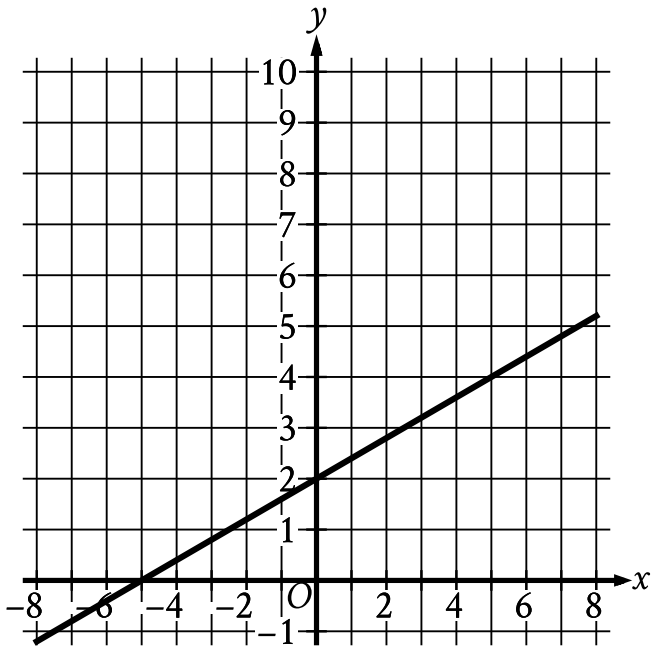
D. $\frac{500}{7}$

Question ID d11910d6

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Linear functions	■□□

ID: d11910d6

1.23



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. $(0, -5)$

Question ID 5907e072

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Linear functions	■□□

ID: 5907e072

1.24

$f(x) = x + b$ 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

Question ID fe287f7e

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Linear functions	■□□

ID: fe287f7e

1.25

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. $f(x) = 60x - 120$

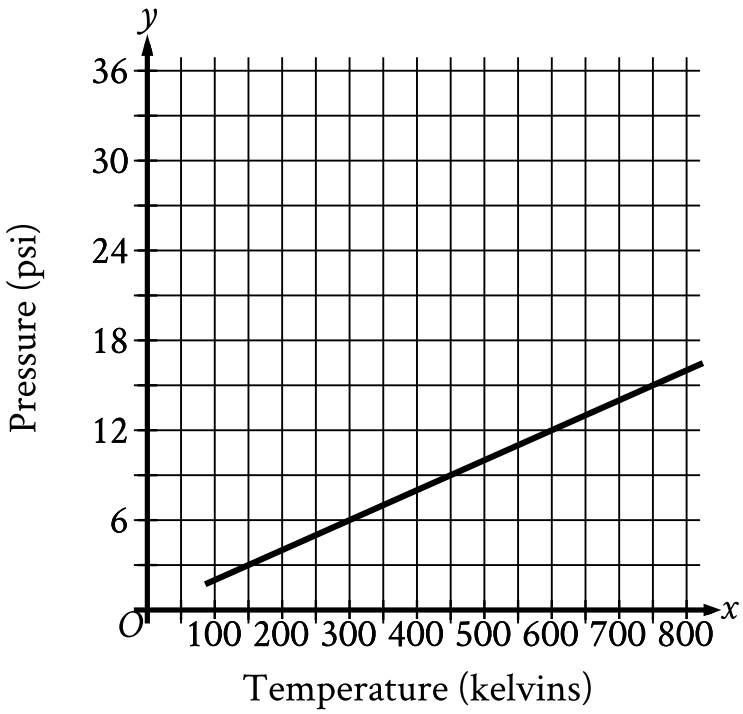
Question ID d0cb49e8

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Linear functions	■□□

ID: d0cb49e8

1.26

Argon is placed inside a container with a constant volume. The graph shows the estimated pressure y, in $\text{pounds per square inch (psi)}$, 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

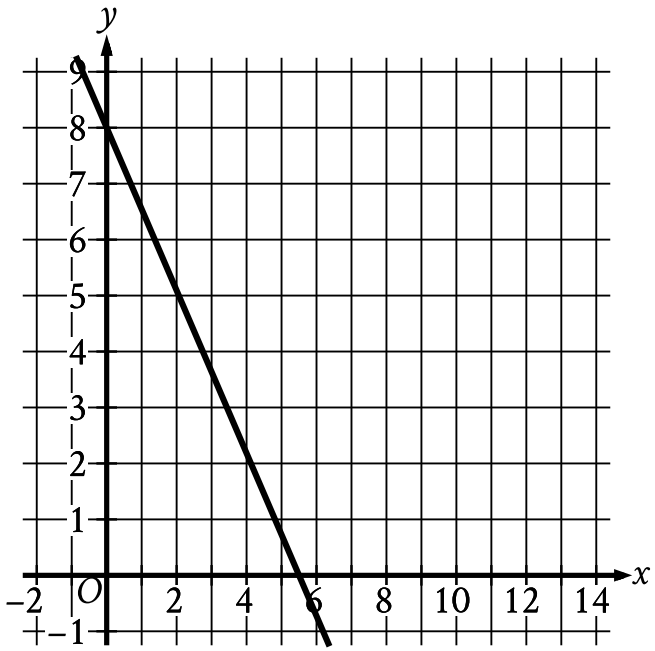
D. 600

Question ID 3174f07d

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Linear functions	■□□

ID: 3174f07d

1.27



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. $(0, 8)$

Question ID 4702da8f

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Linear functions	■□□

ID: 4702da8f

1.28

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

Question ID b51c173d

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Linear functions	■□□

ID: b51c173d

1.29

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. $f(x) = 2x - 5$

Question ID 27198699

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Linear functions	■□□

ID: 27198699

1.30

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

Question ID 0d6ab461

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Linear functions	■□□

ID: 0d6ab461

1.31

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