Question ID b86123af

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Systems of two linear equations in two variables	

ID: b86123af

Hiro and Sofia purchased shirts and pants from a store. The price of each shirt purchased was the same and the price of each pair of pants purchased was the same. Hiro purchased 4 shirts and 2 pairs of pants for \$86, and Sofia purchased 3 shirts and 5 pairs of pants for \$166. Which of the following systems of linear equations represents the situation, if *x* represents the price, in dollars, of each shirt and *y* represents the price, in dollars, of each pair of pants?

$$4x + 2y = 86$$
A. $3x + 5y = 166$

$$4x + 3y = 86$$
B. $2x + 5y = 166$

C.
$$4x+2y=166$$

3x+5y=86

$$4x + 3y = 166$$

D. $2x + 5y = 86$

Question ID 608eeb6e

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Systems of two linear equations in two variables	

ID: 608eeb6e

$$5x = 15$$
$$-4x + y = -2$$

The solution to the given system of equations is (x,y). What is the value of x+y?

- A. -17
- B. **—13**
- C. **13**
- D. **17**

Question ID 84664a7c

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Linear functions	

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.
$$h = 15s + \frac{335}{8}$$

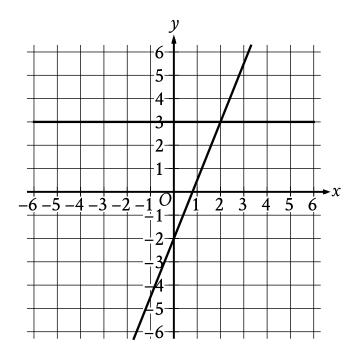
c.
$$h = 8s + \frac{335}{15}$$

D.
$$h = 15s + 8$$

Question ID b0fc3166

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Systems of two linear equations in two variables	

ID: b0fc3166



The graph of a system of linear equations is shown. What is the solution (x,y) to the system?

- A. (0,3)
- B. (1,3)
- C.(2,3)
- D. (3,3)

Question ID 9b886541

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Linear equations in one variable	

ID: 9b886541

If 3x - 8 = 7, what is the value of 3x + 8?

- A. **-1**
- B. **5**
- C. **13**
- D. **23**

Question ID 7fac16fb

Assessment	Test	Domain	Skill	Difficulty	
SAT	Math	Algebra	Linear functions		

ID: 7fac16fb

The function f is defined by $f(x)=rac{7}{10}x+55$. What is the value of f(20)?

Question ID 06fc1726

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Linear functions	

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

Question ID 0eae6be1

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Linear functions	

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.
$$y=rac{1}{84}x$$

C.
$$y=84x$$

D.
$$y=x-84$$

Question ID 2c121b25

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Linear inequalities in one or two variables	

ID: 2c121b25

Valentina bought two containers of beads. In the first container 30% of the beads are red, and in the second container 70% of the beads are red. Together, the containers have at least 400 red beads. Which inequality shows this relationship, where *x* is the total number of beads in the first container and *y* is the total number of beads in the second container?

A.
$$0.3x + 0.7y \ge 400$$

B.
$$0.7x + 0.3y \le 400$$

C.
$$\frac{x}{3} + \frac{y}{7} \le 400$$

D.
$$30x + 70y \ge 400$$

Question ID 4d8ccb96

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Linear equations in two variables	

ID: 4d8ccb96

A chemist studying the impact of salt on a process mixes x kilograms of a low-salt mixture, which is 2% salt by weight, with y kilograms of a high-salt mixture, which is 96% salt by weight, to create 24 kilograms of a mixture that is 4% salt by weight. Which equation represents this situation?

A.
$$0.96x + 0.02y = (0.04)(24)$$

B.
$$0.02x + 0.96y = (0.04)(24)$$

C.
$$0.96x + 0.02y = 24$$

D.
$$0.02x + 0.96y = 24$$

Question ID b23bba4c

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Linear equations in two variables	

ID: b23bba4c

3a + 4b = 25

A shipping company charged a customer \$25 to ship some small boxes and some large boxes. The equation above represents the relationship between *a*, the number of small boxes, and *b*, the number of large boxes, the customer had shipped. If the customer had 3 small boxes shipped, how many large boxes were shipped?

- A. 3
- B. 4
- C. 5
- D. 6

Question ID dba8d38a

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Systems of two linear equations in two variables	

ID: dba8d38a

A petting zoo sells two types of tickets. The standard ticket, for admission only, costs \$5. The premium ticket, which includes admission and food to give to the animals, costs \$12. One Saturday, the petting zoo sold a total of 250 tickets and collected a total of \$2,300 from ticket sales. Which of the following systems of equations can be used to find the number of standard tickets, s, and premium tickets, p, sold on that Saturday?

$$s + p = 250$$

A.
$$5s + 12p = 2,300$$

$$s + p = 250$$

B.
$$12s + 5p = 2,300$$

5s +
$$12p = 250$$

c. $s + p = 2,300$

$$12s + 5p = 250$$

$$s + p = 2,300$$

Question ID 87322577

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Linear equations in two variables	

ID: 87322577

$$x + y = 75$$

The equation above relates the number of minutes, *x*, Maria spends running each day and the number of minutes, *y*, she spends biking each day. In the equation, what does the number 75 represent?

- A. The number of minutes spent running each day
- B. The number of minutes spent biking each day
- C. The total number of minutes spent running and biking each day
- D. The number of minutes spent biking for each minute spent running

Question ID bf36c815

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Linear functions	

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

Question ID c6b151d4

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Linear equations in two variables	

ID: c6b151d4

A total of 364 paper straws of equal length were used to construct two types of polygons: triangles and rectangles. The triangles and rectangles were constructed so that no two polygons had a common side. The equation 3x + 4y = 364 represents this situation, where x is the number of triangles constructed and y is the number of rectangles constructed. What is the best interpretation of (x, y) = (24, 73) in this context?

- A. If **24** triangles were constructed, then **73** rectangles were constructed.
- B. If **24** triangles were constructed, then **73** paper straws were used.
- C. If **73** triangles were constructed, then **24** rectangles were constructed.
- D. If **73** triangles were constructed, then **24** paper straws were used.

Question ID 8c98c834

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Linear equations in two variables	

ID: 8c98c834

The equation y = 0.1x models the relationship between the number of different pieces of music a certain pianist practices, y, during an x-minute practice session. How many pieces did the pianist practice if the session lasted 30 minutes?

- A. 1
- B. 3
- C. 10
- D. 30

Question ID 563407e5

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Linear inequalities in one or two variables	

ID: 563407e5

A bakery sells trays of cookies. Each tray contains at least 50 cookies but no more than 60. Which of the following could be the total number of cookies on 4 trays of cookies?

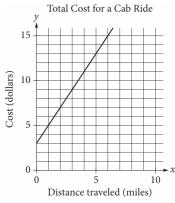
- A. 165
- B. 205
- C. 245
- D. 285

Question ID 3f5375d9

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Linear functions	

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?

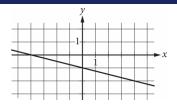
- A. \$2.00
- B. \$2.60
- C. \$3.00
- D. \$5.00

Question ID b2845d88

Assessment Test Domain Skill Difficulty

SAT Math Algebra Linear equations in two variables

ID: b2845d88



Which of the following is an equation of the graph shown in the *xy*-plane above?

A.
$$y = -\frac{1}{4}x - 1$$

B.
$$y = -x - 4$$

$$y = -x - \frac{1}{4}$$

D.
$$y = -4x - 1$$

Question ID 6ac23de7

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Linear equations in one variable	

ID: 6ac23de7

$$\frac{4x}{5} = 20$$

In the equation above, what is the value of *x* ?

- A. 25
- B. 24
- C. 16
- D. 15

Question ID 7392dfc1

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Linear equations in one variable	

ID: 7392dfc1

Which of the following is equivalent to 4x + 6 = 12?

A.
$$2x + 4 = 6$$

B.
$$x+3=3$$

C.
$$3x + 2 = 4$$

D.
$$2x + 3 = 6$$

Question ID 93954cfa

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Linear equations in one variable	

ID: 93954cfa

One pound of grapes costs \$2. At this rate, how many dollars will *c* pounds of grapes cost?

- A. 2c
- B. 2 + c
- C. c
- D. 2

Question ID 8abed0fb

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Systems of two linear equations in two variables	

ID: 8abed0fb

$$y = 2x + 3$$
$$x = 1$$

What is the solution (x,y) to the given system of equations?

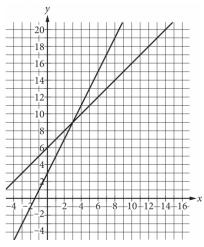
- A. (1,2)
- в. **(1,5)**
- C. (2,3)
- D. (2,7)

Question ID e1259a5a

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Systems of two linear equations in two variables	

ID: e1259a5a

A system of two linear equations is graphed in the xy-plane below.



Which of the following points is the solution to the system of equations?

- A. (3,9)
- B. (6,15)
- c. (8,10)
- D. (12,18)

Question ID 3d04de9c

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Linear equations in one variable	

ID: 3d04de9c

A principal used a total of 25 flags that were either blue or yellow for field day. The principal used 20 blue flags. How many yellow flags were used?

- $\mathsf{A.}\ 5$
- B. **20**
- C. **25**
- D. **30**

Question ID 60f71697

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Linear equations in one variable	

ID: 60f71697

8x = 88

What value of $oldsymbol{x}$ is the solution to the given equation?

- A. 11
- B. **80**
- C. **96**
- $\mathsf{D.}\ 704$

Question ID df32b09c

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Linear inequalities in one or two variables	

ID: df32b09c

Tom scored 85, 78, and 98 on his first three exams in history class. Solving which inequality gives the score, *G*, on Tom's fourth exam that will result in a mean score on all four exams of at least 90?

A.
$$90 - (85 + 78 + 98) \le 4G$$

B.
$$4G + 85 + 78 + 98 \ge 360$$

$$C. \frac{(G+85+78+98)}{4} \ge 90$$

$$D. \frac{(85+78+98)}{4} \ge 90-4G$$

Question ID 12983c1e

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Linear functions	

ID: 12983c1e

х	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 8adf1335

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Linear equations in two variables	

ID: 8adf1335

A city's total expense budget for one year was *x* million dollars. The city budgeted *y* million dollars for departmental expenses and 201 million dollars for all other expenses. Which of the following represents the relationship between *x* and *y* in this context?

A.
$$x + y = 201$$

B.
$$x - y = 201$$

C.
$$2x - y = 201$$

D.
$$y - x = 201$$

Question ID dd797fe2

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Linear equations in two variables	

ID: dd797fe2

$$4x + 3y = 24$$

Mario purchased 4 binders that cost *x* dollars each and 3 notebooks that cost *y* dollars each. If the given equation represents this situation, which of the following is the best interpretation of 24 in this context?

- A. The total cost, in dollars, for all binders purchased
- B. The total cost, in dollars, for all notebooks purchased
- C. The total cost, in dollars, for all binders and notebooks purchased
- D. The difference in the total cost, in dollars, between the number of binders and notebooks purchased

Question ID 550b352c

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Linear equations in one variable	

ID: 550b352c

10 = 2x + 4

How many solutions exist to the equation shown above?

- A. None
- B. Exactly 1
- C. Exactly 3
- D. Infinitely many

Question ID a396ed75

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Linear functions	

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.
$$m(x)=rac{x}{5.7}$$

B.
$$m(x)=x+5.7$$

C.
$$m(x)=x-5.7$$

D.
$$m(x)=5.7x$$

Question ID 87071893

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Linear equations in one variable	

ID: 87071893

$$x+40=95$$

What value of $oldsymbol{x}$ is the solution to the given equation?

Question ID 789975b7

Assessment	Test	Domain	Skill	Difficulty	
SAT	Math	Algebra	Linear equations in two variables		

ID: 789975b7

A gardener buys two kinds of fertilizer. Fertilizer A contains 60% filler materials by weight and Fertilizer B contains 40% filler materials by weight. Together, the fertilizers bought by the gardener contain a total of 240 pounds of filler materials. Which equation models this relationship, where *x* is the number of pounds of Fertilizer A and *y* is the number of pounds of Fertilizer B?

A.
$$0.4x + 0.6y = 240$$

B.
$$0.6x + 0.4y = 240$$

C.
$$40x + 60y = 240$$

D.
$$60x + 40y = 240$$

Question ID cea27ab2

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Linear equations in two variables	

ID: cea27ab2

$$7x - 4y = -84$$

For the given equation, which table gives three values of ${m x}$ and their corresponding values of ${m y}$?

A.	$oldsymbol{x}$	0	4	8
	\boldsymbol{y}	21	28	35

В.	\boldsymbol{x}	0	4	8
	\boldsymbol{y}	35	28	21

C.	$oldsymbol{x}$	21	28	35
	$oldsymbol{y}$	0	4	8

D.	$oldsymbol{x}$	21	28	35
	$oldsymbol{y}$	8	4	0

Question ID 2554b413

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Linear equations in two variables	

ID: 2554b413

In the xy-plane, a line has a slope of 6 and passes through the point (0,8). Which of the following is an equation of this line?

A.
$$y = 6x + 8$$

B.
$$y = 6x + 48$$

C.
$$y = 8x + 6$$

D.
$$y = 8x + 48$$

Question ID ed18c4f7

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Linear equations in one variable	

ID: ed18c4f7

Cathy has n CDs. Gerry has 3 more than twice the number of CDs that Cathy has. In terms of n, how many CDs does Gerry have?

- A. 3n-2
- B. 3n + 2
- C. 2n-3
- D. 2n + 3

Question ID 3462d850

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Linear functions	

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.

Question ID d9d83c02

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Linear equations in one variable	

ID: d9d83c02

For what value of w does w-10=2(w+5)?

- A. **5**
- B. **0**
- C. **-15**
- D. **-20**

Question ID 3c4ce699

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Linear equations in one variable	

ID: 3c4ce699

If 6+x=9, what is the value of 18+3x?

Question ID 9d9fe1e6

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Linear functions	

ID: 9d9fe1e6

In science class, Diego conducted an experiment to learn about evaporation. Diego measured the height of fluid in a beaker over a period of time. The function f(x) = 39 - 0.18x gives the estimated height, in centimeters (cm), of the fluid in the beaker x days after the start of the experiment. Which of the following is the best interpretation of x0 in this context?

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

Question ID 255996a6

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Linear functions	

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

Question ID a1696f3e

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Linear functions	

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

Question ID dfa45424

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Linear equations in two variables	

ID: dfa45424

Tony spends \$80 per month on public transportation. A 10-ride pass costs \$12.50, and a single-ride pass costs \$1.50. If g represents the number of 10-ride passes Tony buys in a month and t represents the number of single-ride passes Tony buys in a month, which of the following equations best represents the relationship between g and t?

A.
$$g + t = 80$$

B.
$$g+t=1.50+12.50$$

C.
$$1.50g + 12.50t = 80$$

D.
$$12.50g + 1.50t = 80$$

Question ID 915463e0

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Linear inequalities in one or two variables	

ID: 915463e0

Normal body temperature for an adult is between 97.8°F and 99°F, inclusive. If

Kevin, an adult male, has a body temperature that is considered to be normal, which of the following could be his body temperature?

- A. 96.7°F
- B. 97.6°F
- C. 97.9°F
- D. 99.7°F

Question ID 89541f9b

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Linear inequalities in one or two variables	

ID: 89541f9b

Which of the following ordered pairs (x, y) satisfies

the inequality 5x - 3y < 4?

- 1. (1, 1)
- 2. (2, 5)
- 3. (3, 2)
- A. I only
- B. II only
- C. I and II only
- D. I and III only

Question ID ee031767

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Systems of two linear equations in two variables	

ID: ee031767

A dance teacher ordered outfits for students for a dance recital. Outfits for boys cost \$26, and outfits for girls cost \$35. The dance teacher ordered a total of 28 outfits and spent \$881. If b represents the number of outfits the dance teacher ordered for boys and g represents the number of outfits the dance teacher ordered for girls, which of the following systems of equations can be solved to find b and g?

A.
$$b+g=881$$

$$26b + 35g = 881$$
B. $b + g = 28$

$$26g + 35b = 28$$
c. $b + g = 881$

$$26g + 35b = 881$$
D. $b+g=28$

Question ID 84d0d07e

Assessment	Test	Domain	Skill	Difficulty	
SAT	Math	Algebra	Linear inequalities in one or two variables		

ID: 84d0d07e

A clothing store is having a sale on shirts and pants. During the sale, the cost of each shirt is \$15 and the cost of each pair of pants is \$25. Geoff can spend at most \$120 at the store. If Geoff buys s shirts and p pairs of pants, which of the following must be true?

A.
$$15s + 25p \le 120$$

B.
$$15s + 25p \ge 120$$

C.
$$25s + 15p \le 120$$

D.
$$25s + 15p \ge 120$$

Question ID 7a987ae4

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Linear equations in one variable	

ID: 7a987ae4

If
$$\frac{2n}{5} = 10$$
, what is the

value of 2n-1?

- A. 24
- B. 49
- C. 50
- D. 99

Question ID b2de69bd

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Linear equations in two variables	

ID: b2de69bd

х	у
1	5
2	7
3	9
4	11

The table above shows some pairs of x values and y values. Which of the following equations could represent the relationship between x and y?

A.
$$y = 2x + 3$$

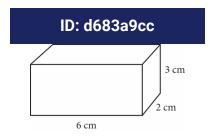
B.
$$y = 3x - 2$$

C.
$$y = 4x - 1$$

D.
$$y = 5x$$

Question ID d683a9cc

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Geometry and Trigonometry	Area and volume	



The figure shows the lengths, in centimeters (cm), of the edges of a right rectangular prism. The volume V of a right rectangular prism is ℓwh , where ℓ is

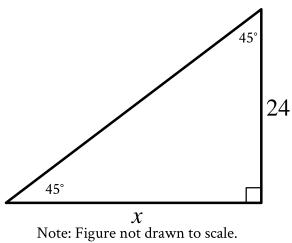
the length of the prism, w is the width of the prism, and h is the height of the prism. What is the volume, in cubic centimeters, of the prism?

- A. 36
- B. 24
- C. 12
- D. 11

Question ID 145337bc

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Geometry and Trigonometry	Right triangles and trigonometry	

ID: 145337bc



In the triangle shown, what is the value of x?

- A. **24**
- B. **45**
- C.48
- D. **69**

Question ID a490003a

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Geometry and Trigonometry	Area and volume	

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The width of a rectangle is 7 centimeters. The length of the rectangle is 40 centimeters longer than the width. What is the area, in square centimeters, of this rectangle?

- A. **7**
- B. **14**
- C. **54**
- D. **329**