Question ID daad7c32

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Linear functions	
ID: daad7c32				

An object hangs from a spring. The formula $\mathcal{E} = 30 + 2W$ relates the length \mathcal{E} , in centimeters, of the spring to the weight *w*, in newtons, of the object. Which of the following describes the meaning of the 2 in this context?

- A. The length, in centimeters, of the spring with no weight attached
- B. The weight, in newtons, of an object that will stretch the spring 30 centimeters
- C. The increase in the weight, in newtons, of the object for each one-centimeter increase in the length of the spring
- D. The increase in the length, in centimeters, of the spring for each one-newton increase in the weight of the object

Question ID 3f8a70lb

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Linear equations in one variable	
ID: 3f8a701b				

 $a = 911. b = 5111. b \neq \frac{5}{9}$

The equation 9x + 5 = a(x + b), where *a* and *b* are constants, has no solutions.

Which of the following must be true?

A. None

B. I only

C. I and II only

D. I and III only

Question ID 0dldca87

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Systems of two linear equations in two variables	
ID: 0dldca87 $3x + y = 29$				

If (x, y) is the solution to the given system of equations, what is the value of y?

Question ID b9839f9e

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Linear equations in two variables	
ID: b9839f9e				

F = 2.50x + 7.00y

In the equation above, F represents the total amount of money, in dollars, a food truck charges for x drinks and y salads. The price, in dollars, of each drink is the same, and the price, in dollars, of each salad is the same. Which of the following is the best interpretation for the number 7.00 in this context?

- A. The price, in dollars, of one drink
- B. The price, in dollars, of one salad
- C. The number of drinks bought during the day
- D. The number of salads bought during the day

Question ID 023c0a8d

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Linear functions	
ID: 023c0a8d				

For the function *f*, if f(3x) = x - 6 for all values of *x*, what is the value of f(6)?

А. **—6**

- В. **-4**
- C. 0
- D. 2

Question ID a7al4e87

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Linear equations in two variables	
ID: a7a1 4 e87				

In the *xy*-plane, line *k* is defined by $\mathbf{x} + \mathbf{y} = \mathbf{0}$. Line *j* is perpendicular to line *k*, and the *y*-intercept of line *j* is (0,3). Which of the following is an equation of line *j*?

A. x + y = 3

- B. x + y = -3
- C. x y = 3
- D. x y = -3

Question ID 90bd9ef8

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Linear inequalities in one or two variables	
ID: 90bd9ef8				

The average annual energy cost for a certain home is \$4,334. The homeowner plans to spend \$25,000 to install a geothermal heating system. The homeowner estimates that the average annual energy cost will then be \$2,712. Which of the following inequalities can be solved to find t, the number of years after installation at which the total amount of energy cost savings will exceed the installation cost?

- A. 25,000 > (4,334 2,712)t
- B. 25,000 < (4,334 2,712)t
- C. 25,000-4,334>2,712t
- $D. 25,000 > \frac{4,332}{2,712}t$

Question ID 5ad9eff0

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Linear equations in one variable	
ID: 5ad9eff0				

The width of a rectangular dance floor is w feet. The length of the floor is 6 feet longer than its width. Which of the following expresses the perimeter, in feet, of the dance floor in terms of w?

A. 2w+6

B. 4w+12

c. $w^2 + 6$

D. W²+6w

Question ID 46f68l29

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Linear equations in one variable	
ID: 46f68l29				

A librarian has 43 books to distribute to a group of children. If he gives each child 2 books, he will have 7 books left over. How many children are in the group?

- A. 15
- B. 18
- C. 25
- D. 29

Question ID 2eef7e6l

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Linear functions	
ID: 2eef7e6l				

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				

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 0df106df

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

ID: 0dfI06df

An online bookstore sells novels and magazines. Each novel sells for \$4, and each magazine sells for \$1. If Sadie purchased a total of 11 novels and magazines that have a combined selling price of \$20, how many novels did she purchase?

- A. 2
- B. 3
- C. 4
- D. 5

Question ID e53870b6

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Linear equations in one variable	
ID: e53870b6				
6x + k = 6x + 5				

In the given equation, *k* is a constant. If the equation has infinitely many solutions, what is the value of *k*?

Question ID alfd2304

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Linear equations in two variables	
ID: alfd2304				

How many liters of a 25% saline solution must be added to 3 liters of a 10% saline solution to obtain a 15% saline solution?

Question ID b544a348

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Systems of two linear equations in two variables	
ID: b544a348				

5x + 3y = 38

x+3y=10

In the solution (x, y) to the system of equations above, what is the value of x?

Question ID 628300a9

SAT	Math	Algebra	Linear equations in	Difficacty
JA1	Matri	Ацеріа	one variable	

ID: 628300a9

A science teacher is preparing the 5 stations of a science laboratory. Each station will have either Experiment A materials or Experiment B materials, but not both. Experiment A requires 6 teaspoons of salt, and Experiment B requires 4 teaspoons of salt. If *x* is the number of stations that will be set up for Experiment A and the remaining stations will be set up for Experiment B, which of the following expressions represents the total number of teaspoons of salt required?

A. 5x

B. 10x

C. 2x+20

D. 10x + 20

Question ID 9ed4cla2

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Linear equations in two variables	
ID: 9ed4cla2				

What is the slope of the graph of $y=rac{1}{4}(27x+15)+7x$ in the xy-plane?

Question ID 45bba652

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Linear equations in one variable	
ID: 45bba652				

$\Pi \simeq 0$ $V_1 = 0$, what is

the value of x - 5?

- A. 2
- B. 5
- C. 7
- D. 12

Question ID b75f78l2

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Linear inequalities in one or two variables	
ID: b75f78l2				

Maria plans to rent a boat. The boat rental costs \$60 per hour, and she will also have to pay for a water safety course that costs \$10. Maria wants to spend no more than \$280 for the rental and the course. If the boat rental is available only for a whole number of hours, what is the maximum number of hours for which Maria can rent the boat?

Question ID lecaa9c0

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Linear functions	
ID: lecaa9c0				

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