# SAT Math

## Systems of Linear Equations 1

| Question # | ID |
|---|---|
| **1.1** | 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?
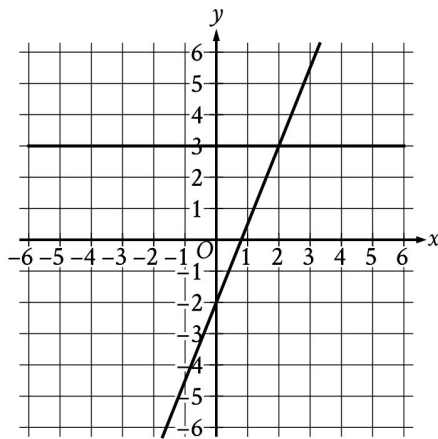
A.
$$4x + 2y = 86$$
$$3x + 5y = 166$$

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

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

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

| | |
|---|---|
| **1.2** | 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. $(3, 3)$

SAT Math

## Systems of Linear Equations 1

| Question # | ID |
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| **1.3** | 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?

A. $$\begin{aligned} s + p &= 250 \\ 5s + 12p &= 2{,}300 \end{aligned}$$

B. $$\begin{aligned} s + p &= 250 \\ 12s + 5p &= 2{,}300 \end{aligned}$$

C. $$\begin{aligned} 5s + 12p &= 250 \\ s + p &= 2{,}300 \end{aligned}$$

D. $$\begin{aligned} 12s + 5p &= 250 \\ s + p &= 2{,}300 \end{aligned}$$

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| --- | --- |
| **1.4** | aff28230 |

$$x = 10$$
$$y = x + 21$$

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

A. 2.1

B. 10

C. 21

D. 31

| | |
| --- | --- |
| **1.5** | 8abed0fb |

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

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

A. $(1, 2)$

B. $(1, 5)$

C. $(2, 3)$

D. $(2, 7)$

| Question # | ID |
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**1.6**  e1259a5a

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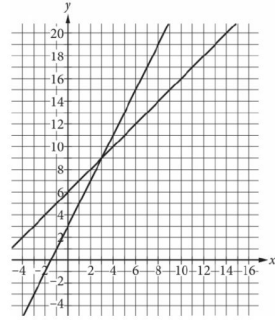


Which of the following points is the solution to the system of equations?

A. $(3,9)$

B. $(6,15)$

C. $(8,10)$

D. $(12,18)$

**1.7**  ca9bb527

$$y = 4x - 9$$
$$y = 19$$

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

A. $(4, 19)$

B. $(7, 19)$

C. $(19, 4)$

D. $(19, 7)$

**1.8**  ece00725

Connor has $c$ dollars and Maria has $m$ dollars. Connor has $4$ times as many dollars as Maria, and together they have a total of $\$25.00$. Which system of equations represents this situation?

A. $c = 4m$
  $c + m = 25$

B. $m = 4c$
  $c + m = 25$

C. $c = 25m$
  $c + m = 4$

D. $m = 25c$
  $c + m = 4$

| Question # | ID |
|---|---|

**1.9**    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.
$$26b + 35g = 28$$
$$b + g = 881$$

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

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

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

**1.10**    cd33b015

$$x + y = 20$$
$$2(x + y) + 3y = 85$$

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

A. 10

B. 15

C. 60

D. 65

**1.11**    0d1dca87

$$3x + y = 29$$
$$x = 2$$

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

| Question # | ID |
|---|---|
| **1.12** | 0df106df |

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

| | |
|---|---|
| **1.13** | 7d89376f |

A discount airline sells a certain number of tickets, $x$, for a flight for $90 each. It sells the number of remaining tickets, $y$, for $250 each. For a particular flight, the airline sold 120 tickets and collected a total of $27,600 from the sale of those tickets. Which system of equations represents this relationship between $x$ and $y$ ?

A. $\begin{cases} x+y=120 \\ 90x+250y=27,600 \end{cases}$

B. $\begin{cases} x+y=120 \\ 90x+250y=120(27,600) \end{cases}$

C. $\begin{cases} x+y=27,600 \\ 90x+250y=120(27,600) \end{cases}$

D. $\begin{cases} 90x=250y \\ 120x+120y=27,600 \end{cases}$

| | |
|---|---|
| **1.14** | 17f176ec |

A movie theater charges $11 for each full-price ticket and $8.25 for each reduced-price ticket. For one movie showing, the theater sold a total of 214 full-price and reduced-price tickets for $2,145. Which of the following systems of equations could be used to determine the number of full-price tickets, $f$, and the number of reduced-price tickets, $r$, sold?

A. $\begin{matrix} f+r=2,145 \\ 11f+8.25r=214 \end{matrix}$

B. $\begin{matrix} f+r=214 \\ 11f+8.25r=2,145 \end{matrix}$

C. $\begin{matrix} f+r=214 \\ 8.25f+11r=2,145 \end{matrix}$

D. $\begin{matrix} f+r=2,145 \\ 8.25f+11r=214 \end{matrix}$

| Question # | ID |
|---|---|
| **1.15** | 44d65912 |

Angela is playing a video game. In this game, players can score points only by collecting coins and stars. Each coin is worth $c$ points, and each star is worth $s$ points.

- The first time she played, Angela scored 700 points. She collected 20 coins and 10 stars.
- The second time she played, Angela scored 850 points. She collected 25 coins and 12 stars.

Which system of equations can be used to correctly determine the values of $c$ and $s$ ?

A.
$$10c + 20s = 700$$
$$12c + 25s = 850$$

B.
$$20c + 10s = 700$$
$$25c + 12s = 850$$

C.
$$20c + 700s = 10$$
$$25c + 850s = 12$$

D.
$$700c + 20s = 10$$
$$850c + 25s = 12$$
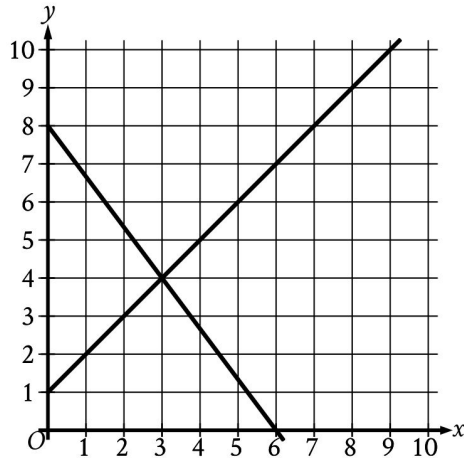
**1.16**    4b76c7f1

$$2x + 7y = 9$$
$$8x + 28y = a$$

In the given system of equations, $a$ is a constant. If the system has infinitely many solutions, what is the value of $a$ ?

A. 4

B. 9

C. 36

D. 54

| Question # | ID |
|---|---|
| **1.17** | e6545fa8 |



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

A. $(2, 3)$

B. $(3, 4)$

C. $(4, 5)$

D. $(5, 6)$

**1.18**    f5563c26

$$y = 4$$
$$x = y + 6$$

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

A. $10$

B. $6$

C. $4$

D. $2$

**1.19**    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. $17$

# SAT Math

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| --- | --- |
| 1.20 | 317e80f9 |

$$x + y = 18$$
$$5y = x$$

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

A. $(15, 3)$

B. $(16, 2)$

C. $(17, 1)$

D. $(18, 0)$

| | |
| --- | --- |
| 1.21 | 4fb8adf7 |

$$4x - 3y = 5$$
$$x = 8$$

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

A. $(8, 9)$

B. $(8, -24)$

C. $(8, -9)$

D. $(8, 24)$