

Question ID 7d5a0f4e

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

ID: 7d5a0f4e

In August, a car dealer completed **15** more than **3** times the number of sales the car dealer completed in September. In August and September, the car dealer completed **363** sales. How many sales did the car dealer complete in September?

Question ID b0e72232

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

ID: b0e72232

$3x = 36y - 45$

One of the two equations in a system of linear equations is given. The system has no solution. Which equation could be the second equation in this system?

- A. $x = 4y$
- B. $\frac{1}{3}x = 4y$
- C. $x = 12y - 15$
- D. $\frac{1}{3}x = 12y - 15$

Question ID 9609a243

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

ID: 9609a243

$$\begin{aligned} 4x - 9y &= 9y + 5 \\ hy &= 2 + 4x \end{aligned}$$

In the given system of equations, h is a constant. If the system has no solution, what is the value of h ?

- A. -9
- B. 0
- C. 9
- D. 18

Question ID 0876dbef

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

ID: 0876dbef

$$\begin{aligned}\frac{7}{8}y - \frac{5}{8}x &= \frac{4}{7} - \frac{7}{8}y \\ \frac{5}{4}x + \frac{7}{4} &= py + \frac{15}{4}\end{aligned}$$

In the given system of equations, p is a constant. If the system has no solution, what is the value of p ?

Question ID 4a2f9ba8

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

ID: 4a2f9ba8

$$\begin{aligned}8x + 7y &= 9 \\ 24x + 21y &= 27\end{aligned}$$

For each real number r , which of the following points lies on the graph of each equation in the xy -plane for the given system?

- A. $\left(r, -\frac{8r}{7} + \frac{9}{7}\right)$
- B. $\left(-\frac{8r}{7} + \frac{9}{7}, r\right)$
- C. $\left(-\frac{8r}{7} + 9, \frac{8r}{7} + 27\right)$
- D. $\left(\frac{r}{3} + 9, -\frac{r}{3} + 27\right)$

Question ID 52007f35

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

ID: 52007f35

$$\begin{aligned}\frac{3}{2}y - \frac{1}{4}x &= \frac{2}{3} - \frac{3}{2}y \\ \frac{1}{2}x + \frac{3}{2} &= py + \frac{9}{2}\end{aligned}$$

In the given system of equations, p is a constant. If the system has no solution, what is the value of p ?

Question ID b1047a54

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

ID: b1047a54

$$\begin{aligned}\frac{2}{5}x + \frac{7}{5}y &= \frac{2}{7} \\ gx + ky &= \frac{5}{2}\end{aligned}$$

In the given system of equations, g and k are constants. The system has infinitely many solutions. What is the value of $\frac{g}{k}$?

Question ID c130b16c

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

ID: c130b16c

$y = 6x + 18$

One of the equations in a system of two linear equations is given. The system has no solution. Which equation could be the second equation in the system?

- A. $-6x + y = 18$
- B. $-6x + y = 22$
- C. $-12x + y = 36$
- D. $-12x + y = 18$

Question ID 5e7991d4

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

ID: 5e7991d4

$$(x - 2) - 4(y + 7) = 117$$

$$(x - 2) + 4(y + 7) = 442$$

The solution to the given system of equations is (x, y) . What is the value of $6(x - 2)$?

Question ID 2ebd5e5b

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

ID: 2ebd5e5b

$$\begin{aligned}24x + y &= 48 \\ 6x + y &= 72\end{aligned}$$

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

Question ID 90c618a3

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

ID: 90c618a3

$$\begin{aligned} 4x - 6y &= 10y + 2 \\ ty &= \frac{1}{2} + 2x \end{aligned}$$

In the given system of equations, t is a constant. If the system has no solution, what is the value of t ?

Question ID efaeaf88

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

ID: efaeaf88

$$5y = 10x + 11$$

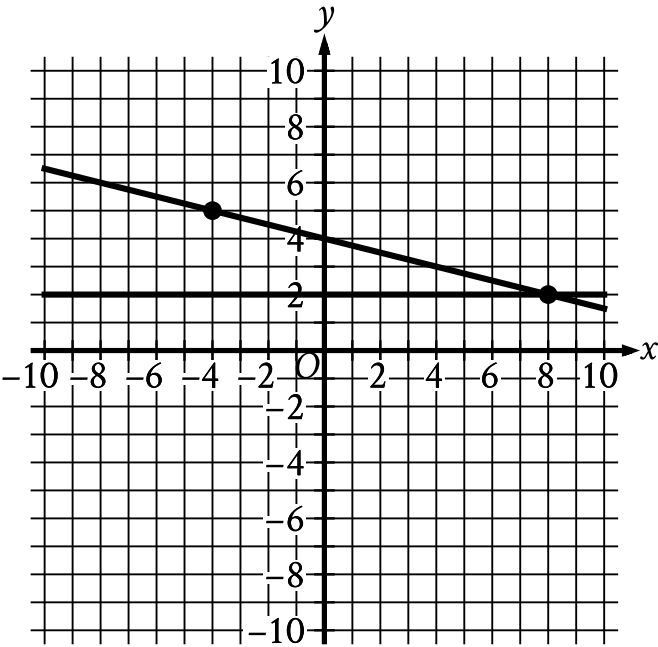
$$-5y = 5x - 21$$

The solution to the given system of equations is (x, y) . What is the value of $30x$?

Question ID 0b28166c

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

ID: 0b28166c



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If a new graph of three linear equations is created using the system of equations shown and the equation $x + 4y = -16$, how many solutions (x, y) will the resulting system of three equations have?

- A. Zero
- B. Exactly one
- C. Exactly two
- D. Infinitely many

Question ID 8f9ba995

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

ID: 8f9ba995

$$\begin{aligned} -12x + 14y &= 36 \\ -6x + 7y &= -18 \end{aligned}$$

How many solutions does the given system of equations have?

- A. Exactly one
- B. Exactly two
- C. Infinitely many
- D. Zero

Question ID 5cf2a640

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

ID: 5cf2a640

$$\begin{aligned}7x + 6y &= 5 \\ 28x + 24y &= 20\end{aligned}$$

For each real number r , which of the following points lies on the graph of each equation in the xy -plane for the given system?

- A. $(r, -\frac{6r}{7} + \frac{5}{7})$
- B. $(r, \frac{7r}{6} + \frac{5}{6})$
- C. $(\frac{r}{4} + 5, -\frac{r}{4} + 20)$
- D. $(-\frac{6r}{7} + \frac{5}{7}, r)$

Question ID 4898aa47

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

ID: 4898aa47

$$\frac{7}{2}x + 6y = 25$$

$$\frac{5}{2}x + 6y = 23$$

The solution to the given system of equations is (x, y) . What is the value of $\frac{17}{2}x + 18y$?

- A. 2
- B. 3
- C. 48
- D. 71

Question ID e5b53db0

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

ID: e5b53db0

$$ax + by = 72$$

$$6x + 2by = 56$$

In the given system of equations, a and b are constants. The graphs of these equations in the xy -plane intersect at the point $(4, y)$. What is the value of a ?

- A. 3
- B. 4
- C. 6
- D. 14

Question ID 3eb27778

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

ID: 3eb27778

Store A sells raspberries for **\$5.50** per pint and blackberries for **\$3.00** per pint. Store B sells raspberries for **\$6.50** per pint and blackberries for **\$8.00** per pint. A certain purchase of raspberries and blackberries would cost **\$37.00** at Store A or **\$66.00** at Store B. How many pints of blackberries are in this purchase?

- A. 4
- B. 5
- C. 8
- D. 12

Question ID 1c72d95e

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

ID: 1c72d95e

$$y = 4x + 1$$

$$4y = 15x - 8$$

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

Question ID 31dc807b

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

ID: 31dc807b

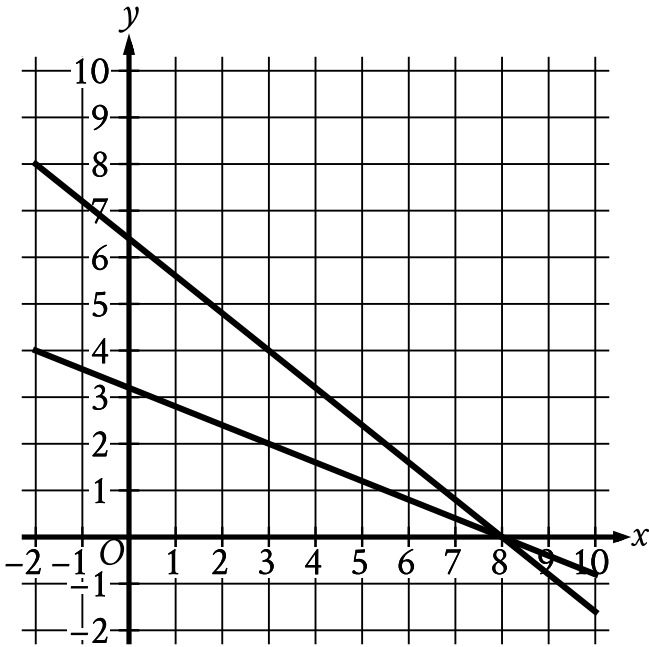
$$\begin{aligned} -x - wy &= -337 \\ 2x - wy &= 47 \end{aligned}$$

In the given system of equations, w is a constant. In the xy -plane, the graphs of these equations intersect at the point $(q, 19)$, where q is a constant. What is the value of w ?

Question ID 064ba59a

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

ID: 064ba59a



What system of linear equations is represented by the lines shown?

- A. $8x + 4y = 32$
 $-10x - 4y = -64$
- B. $8x - 4y = 32$
 $-10x + 4y = -64$
- C. $4x - 10y = 32$
 $-8x + 10y = -64$
- D. $4x + 10y = 32$
 $-8x - 10y = -64$

Question ID 11f714b1

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

ID: 11f714b1

$$5x + 14y = 45$$

$$10x + 7y = 27$$

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

Question ID ac73d6d9

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

ID: ac73d6d9

A sample of a certain alloy has a total mass of **50.0** grams and is **50.0%** silicon by mass. The sample was created by combining two pieces of different alloys. The first piece was **30.0%** silicon by mass and the second piece was **80.0%** silicon by mass. What was the mass, in grams, of the silicon in the second piece?

- A. **9.0**
- B. **16.0**
- C. **20.0**
- D. **30.0**

Question ID 5cc1eacc

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

ID: 5cc1eacc

$$\begin{aligned}2x + 3y &= 7 \\ 10x + 15y &= 35\end{aligned}$$

For each real number r , which of the following points lies on the graph of each equation in the xy -plane for the given system?

- A. $\left(\frac{r}{5} + 7, -\frac{r}{5} + 35\right)$
- B. $\left(-\frac{3r}{2} + \frac{7}{2}, r\right)$
- C. $\left(r, \frac{2r}{3} + \frac{7}{3}\right)$
- D. $\left(r, -\frac{3r}{2} + \frac{7}{2}\right)$

Question ID a9053f97

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

ID: a9053f97

$$2(8x) + 4(7y) = 12$$

$$-2(8x) + 4(7y) = 12$$

The solution to the given system of equations is (x, y) . What is the value of $8x + 7y$?

Question ID 1b19f9c0

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

ID: 1b19f9c0

$$\begin{aligned} 48x - 72y &= 30y + 24 \\ ry &= \frac{1}{6} - 16x \end{aligned}$$

In the given system of equations, r is a constant. If the system has no solution, what is the value of r ?

Question ID 3c503333

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

ID: 3c503333

Which system of linear equations has no solution?

- A. $-2x + 3y = -9$
 $2x - 3y = 9$
- B. $2x - 3y = 9$
 $3x + 4y = 10$
- C. $2x - 3y = 9$
 $-6x + 9y = -27$
- D. $-2x + 3y = 9$
 $4x - 6y = 18$

Question ID ec5b59f7

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

ID: ec5b59f7

A piece of wire with a length of **32** inches is cut into two parts. One part has a length of x inches, and the other part has a length of y inches. The value of x is **4** more than **3** times the value of y . What is the value of x ?

Question ID a32041f6

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

ID: a32041f6

$$\begin{aligned}6 + 7r &= pw \\ 7r - 5w &= 5w + 11\end{aligned}$$

In the given system of equations, p is a constant. If the system has no solution, what is the value of p ?

Question ID 6d01548f

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

ID: 6d01548f

$$\begin{aligned} 48x - 64y &= 48y + 24 \\ ry &= \frac{1}{8} - 12x \end{aligned}$$

In the given system of equations, r is a constant. If the system has no solution, what is the value of r ?