

SAT Equations and Answers (Speedy Study Guide)

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SAT

EQUATIONS & ANSWERS

If $3x + y = 25$ and $4x + y = 23$, what is the value of x ?

Correct answer: 2

Explanation: You can subtract the second equation from the first equation to eliminate y :

$$7x + y = 25 - 4x + y = 23; 7x - 4x = x; y = 9; 25 - 23 = 2$$

$$x = 2$$

You could also solve one equation for y and substitute that value in for y in the other equation:

$$4x + y = 23 \rightarrow y = 23 - 4x$$

$$7x + y = 25 \rightarrow 7x + (23 - 4x) = 25 \rightarrow x + 23 = 25 \rightarrow x = 2$$

What is the value of the x -coordinate of the point of intersection that is common to ALL three lines?

Correct answer: There is no point of intersection.

Explanation: If the point of intersection lies on all three lines, then we should be able to select any two lines, find their point of intersection, and check up with the same point of intersection each time. In other words, the point of intersection of the first two lines must be the point of intersection of the second and third lines.

Let's consider the first and second lines. We can solve the system of equations by substituting the value of y from the second equation into the first:

$$y = 2x + 3$$

$$x + 2(2x + 3) = 1$$

$$x + 4x + 6 = 1$$

$$5x = -5$$

$$x = -1$$

$$y = 2(-1) + 3 = 1$$

The point of intersection of the first two lines is $(-1, 1)$.

Now we can find the point of intersection of the second and third lines. Again, we can substitute the value of y from the second equation into the third:

$$y = 2x + 3$$

$$4x - 1(2x + 3) = 2$$

$$4x - 4x - 3 = 2$$

$$-3 = 2$$

$$x = 4.5$$

$$y = 2(4.5) + 3 = 12$$

Thus, the second and third lines intersect at $(4.5, 12)$.

Because the point of intersection between the first and second line does not coincide with the point of intersection between the second and third, there is no point that is common to ALL three lines. Thus, there is no point of intersection.

If (x, y) satisfies the system of equations given below, find the value of $x + y$.

$$3x - 2y = 1$$

$$x + 4y = 22$$

Correct answer: 12

Explanation: Method 1: Add the two equations

If $3x + 7z = 96$ and $z = 12$, what does x equal?

Correct answer: -8

Explanation: Subtract $7z$ and $7z$ from the both sides to get $-6z = -84$.

Divide both sides by $-6 \rightarrow -6z = -84$

What is the value of x ?

$$3x + 2y = 23$$

$$2x - 3y = 10$$

Correct answer: 6.30

Explanation: Solving for y in the first equation yields $y = 10.5 - 1.5x$. Plugging that into the second equation and solving for x yields 6.30.

$7x + 3y = 20$ and $-4x - 6y = 11$. Find the value of $3x - 3y$.

Correct answer: 31

Explanation: We can add these equations to one another:

$$(7x + 3y = 20) + (-4x - 6y = 11) \rightarrow (3x - 3y = 31)$$

Consider the three lines given by the following equations:

$$x + 2y = 5$$

$$y = 2x + 3$$

$$4x - 3y = 2$$

Filesize: 6.91 MB

Reviews

This publication is fantastic. It is one of the most amazing publication i have got study. I am just pleased to explain how this is actually the best pdf i have got read through in my individual lifestyle and could be he finest publication for possibly.
(Mr. Kristoffer Hills)

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