

Who is right?

Geometry students are arguing about how to do this homework problem:

Solve the equation $2x^2 - 14x + 20 = 0$ for x .

Stefon starts like this:

$$\begin{array}{r} 2x^2 - 14x + 20 = 0 \\ +14x \quad +14x \\ \hline 2x^2 + 20 = 14x \end{array}$$

Katie starts like this:

	x				
$2x$	<table border="1"><tr><td>$2x^2$</td><td></td></tr><tr><td></td><td>20</td></tr></table>	$2x^2$			20
$2x^2$					
	20				

Miguel starts like this:

$$2x^2 - 14x + 20 = 0$$

$$a = 2 \quad b = -14 \quad c = 20$$

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

Who is correct? How do you know?

Later, Karla and Shirley are arguing over their answers.

Karla says the answer is $(5, 0)$ and $(2, 0)$ Shirley says the answer is $x = 5$ and $x = 2$.

Who is correct? Why? What mistake is one person making?

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$$\begin{aligned} 2x^2 - 14x + 20 &= 0 \\ a = 2 \quad b = -14 \quad c &= 20 \\ x &= \frac{-b \pm \sqrt{b^2 - 4ac}}{2a} \end{aligned}$$

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Katie starts like this: ✓

$$\begin{array}{c} x + 2 \\ \begin{array}{|c|c|} \hline 2x^2 & -14x \\ \hline -10x & 20 \\ \hline \end{array} \\ (2x + 10)(x + 2) = 0 \end{array}$$

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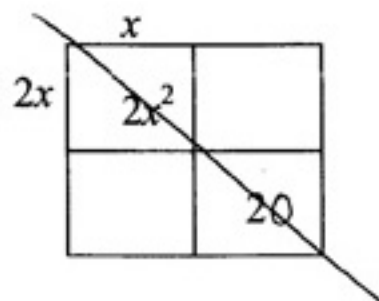
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[Correct]

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Miguel starts like this:

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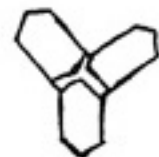
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