

Solving Equations Cue Cards (with examples)

Inverse Operations: (Opposites)	
Addition & Subtraction Positive # & Negative #	Multiplication & Division Square & Square Root

Solving 1-Step Equations Cue Card with Examples

Step 1:	Use inverse operations to undo constant or coefficient on the same side of the variable
<div style="border: 1px solid black; padding: 5px;"> <p style="text-align: center; background-color: yellow;">One Step Addition Example</p> <p style="text-align: center; color: red; font-size: small;">The Opposite of Addition is Subtraction</p> $y + 14 = 20$ $\quad -14 \quad -14$ $y = 6 \quad \checkmark$ <p style="text-align: center; font-size: x-small;">The value which makes the equation true is 6.</p> </div>	<div style="border: 1px solid black; padding: 5px;"> <p style="text-align: center; background-color: lightgreen;">ONE STEP SUBTRACTION EXAMPLE</p> <p style="text-align: center; color: red; font-size: small;">The Opposite of Subtraction is Addition</p> $x - 120 = 80$ $\quad +120 \quad +120$ $x = 200 \quad \checkmark$ <p style="text-align: center; font-size: x-small;">The value which makes the equation true is 200.</p> </div>
<div style="border: 1px solid black; padding: 5px;"> <p style="text-align: center; background-color: pink;">Multiplication Example</p> <p style="text-align: center; color: red; font-size: small;">The Opposite of Multiplication is Division</p> $3n = 12$ $\frac{\cancel{3}n}{\cancel{3}} = \frac{12}{3} \quad \begin{array}{l} 3/3 \text{ cancels down} \\ \text{to become } 1/1 = 1 \end{array}$ $n = 4 \quad \checkmark \quad \begin{array}{l} 1n \text{ is simply "n"} \end{array}$ <p style="text-align: center; font-size: x-small;">The value which makes the equation true is 4.</p> </div>	<div style="border: 1px solid black; padding: 5px;"> <p style="text-align: center; background-color: lightblue;">One Step Division Example</p> <p style="text-align: center; color: red; font-size: small;">The Opposite of Division is Multiplication.</p> $\frac{k}{2} = 16$ <p style="text-align: right; font-size: x-small;">k is divided by 2, so we need to multiply both sides by 2</p> $\frac{\cancel{2}k}{\cancel{2}} \times 2 = 16 \times 2 \quad \begin{array}{l} 2/2 \text{ cancels down} \\ \text{to become } 1/1 = 1 \end{array}$ $k = 32 \quad \checkmark \quad \begin{array}{l} 1k \text{ is simply "k"} \end{array}$ <p style="text-align: center; font-size: x-small;">The value which makes the equation true is 32.</p> </div>

Solving 2-Step Equations Cue Card w/ examples

Step 1:	Use inverse operations to undo the constant on the same side of the variable .
Step 2:	Use inverse operations to undo the multiplication or division
<p>Example 1:</p> $\begin{array}{r} -3x + 4 = 16 \\ \quad -4 \quad -4 \\ \hline -3x = 12 \\ \quad -3 \quad -3 \\ \hline x = -4 \end{array}$	<p>Example 2:</p> $\begin{array}{r} \frac{x}{2} - 6 = 3 \\ \quad + 6 \quad +6 \\ \hline (2) \frac{x}{2} = 9 (2) \\ \hline x = 18 \end{array}$

Solving Equations Cue Cards (with examples)

Solving Multi-Step Equations	
Step 1:	Distribute <div style="display: flex; align-items: center; justify-content: center;"> <div style="border: 1px solid black; padding: 2px; margin-right: 10px;">Multiply</div> $5(\overset{\curvearrowright}{x} + \overset{\curvearrowright}{6})$ $5x + 30$ </div>
Step 2:	Combine Like Terms on the SAME side of the equal sign $\underline{4a} + \underline{5} + \underline{2a} - \underline{3}$ $\mathbf{6a + 2}$
Step 3:	Is there a variable on both sides? <div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <p>Yes; Use inverse operations (add or subtract) to move the variable term to the left</p> </div> <div style="width: 45%;"> <p>No; Go to Step 4</p> </div> </div>
Step 4:	Use inverse operations to undo the constant on the same side of the variable
Step 5:	Use inverse operations to undo any multiplication or division
Example 1:	Example 2:
$4x + 9 = 2x - 6$ $\underline{-2x} \quad \quad \quad \underline{-2x}$ $2x + 9 = -6$ $\underline{-9} \quad \quad \quad \underline{-9}$ $2x = -15$ $\underline{2x} = \underline{-15}$ $2 \quad \quad \quad 2$ $x = -\frac{15}{2}$	<p>Handwritten work for Example 2:</p> $\begin{array}{l} -3(2n - 3) = 25 - 8n \\ -6n + 9 = 25 - 8n \\ +8n \quad \quad \quad +8n \\ \hline 2n + 9 = 25 - 8n \\ -9 \quad \quad \quad -9 \\ \hline 2n = 16 \\ \frac{2n}{2} = \frac{16}{2} \\ n = 8 \end{array}$