

Day 3: Model Applications Problems with Algebraic Equations!

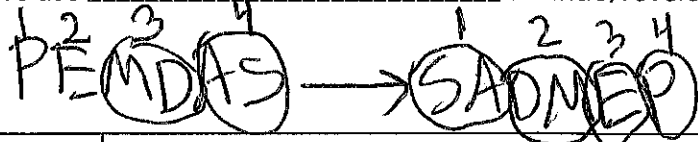
#3

Sequencing Words

Before After First Then During Throughout Next Others:

Whatever you do to one side, you do to the other

When we undo operations, we use reverse order to undo/reverse them.



Examples:

<p>1) Solve $-4x - 8 = 16$ and check your solution.</p> <p><u>Work</u></p> <p>$+8$ $+8$ <u>Explain the Steps</u> Add 8</p> $\frac{-4x}{-4} = \frac{24}{-4}$ <p>Divide -4</p> <p>$x = -6$</p> <p>$-4(-6) - 8 \stackrel{?}{=} 16$ $24 - 8 = 16$</p>	<p>2) Solve $-12 = \frac{w}{3} - 10$ and check.</p> <p><u>Work</u></p> <p>$+10$ $+10$ <u>Explain the Steps</u> Plus 10</p> $-2 = \frac{w}{3}$ <p>Times 3</p> $-6 = w$ <p>$-12 \stackrel{?}{=} \frac{-6}{3} - 10$ $-12 = -2 - 10$</p> <p>☺</p>
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Error Analysis – Solving Equations

Directions: Finn solved the following equations but was having some trouble. In each of the following problems, Finn made a mistake. See if you can help Finn fix his mistakes. Examine the problem. When you find the mistake, circle it. Then, in the space provided, explain why it is a mistake, and solve the equation correctly.

Finn's Work Explain: What mistake(s) did he make?

$$\begin{array}{r|l} 3x + 2x - 6 = 24 & -2x - 2x \\ \hline x - 6 = 24 \\ +6 & +6 \\ \hline x = 30 \end{array}$$

$3x + 2x = 5x$
 $-2x - 2x = -4x$

Don't combine like terms correctly

$$\begin{array}{r|l} 3(x-2) = 12x+6 \\ \hline 3x-2 = 12x+6 \\ -3x & -3x \\ \hline -2 = 9x+6 \\ +6 & +6 \\ \hline 4 = 9x \\ 0.44 = x \end{array}$$

$$3(x-2) = 3x-6$$

Corrected Solutions

$$\begin{array}{r} 5x - 6 = 24 - 4x \\ +6 \quad +6 \\ \hline 5x = 30 - 4x \\ +4x \quad +4x \\ \hline 9x = 30 \\ \frac{9x}{9} = \frac{30}{9} \\ x = \frac{30}{9} = \frac{10}{3} \end{array}$$

$$\begin{array}{r} 3x - 6 = 12x + 6 \\ +6 \quad +6 \\ \hline 3x = 12x + 12 \\ -12x \quad -12x \\ \hline -9x = 12 \\ \frac{-9x}{-9} = \frac{12}{-9} \\ x = \frac{12}{-9} = \frac{4}{-3} \end{array}$$