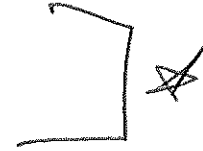


4.5 One Step Equations

- Our goal when solving equations is to ISOLATE the variable.
- Whatever we do to one side, we have to do to the OTHER side.



Zero Pair: TWO NUMBERS WHOSE SUM IS ZERO
(EXAMPLES: -1 AND 1, 5 AND -5, 4 AND -4....)



- To evaluate expressions we use the ORDER OF OPERATIONS. (PEMDAS)
- To solve equations we use opposite, or INVERSE OPERATIONS to isolate the variable(SADMEP)

Remember...

✓ Addition	undoes	<u>SUBTRACTION</u>
✓ Subtraction	undoes	<u>ADDITION</u>
✓ Multiplication	undoes	<u>DIVISION</u>
✓ Division	undoes	<u>MULTIPLICATION</u>

Solving Equations using Addition and Subtraction

Step 1: Use opposite or inverse operations, to ISOLATE the variable

Step 2: Simplify

Step 3: Check by substituting your answer in for the variable

Examples:

$$\begin{array}{r}
 x + 7 = 34 \\
 x + 7 - 7 \quad | \quad 34 - 7 \\
 \hline
 x = 27
 \end{array}$$

Check: $x + 7 = 34$

$$\begin{array}{r}
 18 = x - 4 \\
 x - 4 = 18 \\
 x - 4 + 4 \quad | \quad 18 + 4 \\
 \hline
 x = 22
 \end{array}$$

Check: $18 = x - 4$

$$\begin{array}{r}
 18 = 22 - 4 \\
 18 = 18
 \end{array}$$

$$\begin{array}{r}
 a + 9 = -8 \\
 a + 9 - 9 \quad | \quad -8 + 9 \\
 \hline
 a = -17
 \end{array}$$

Check:

~~$e + 3.7 = -7.8$~~

Check:

Summarize what you learned today:

$$\begin{array}{r}
 c + \frac{1}{5} = \frac{13}{15} \\
 c + \frac{1}{5} - \frac{1}{5} = \frac{13}{15} - \frac{1}{5} \\
 c = \frac{13}{15} - \frac{3}{15} \\
 c = \frac{10}{15} = \frac{2}{3}
 \end{array}$$