

Warm Up

October 2, 2018

1.) **Translate** the algebraic expression into a verbal phrase:  $5(n - 3)$ .

5 times the difference of a number and 3.

2.) Simplify the expressions:

$$\begin{aligned} \text{A. } & 7 - 9(2 - 3) + 5 \\ & 7 - 9(-1) + 5 \\ & 7 + 9 + 5 \\ & 21 \end{aligned}$$

$$\begin{aligned} \text{B. } & -2(6a - 3b) \\ & -12a + 6b \end{aligned}$$

3.) **Translate** then **solve**.

Six less than three times a number is 15.

$$\begin{aligned} 3x - 6 &= 15 \\ +6 &+6 \\ \hline 3x &= 21 \\ \frac{3}{3} & \quad \frac{3}{3} \\ x &= 7 \end{aligned}$$

## NO SOLUTION & INFINITE SOLUTION

No Solution:	Infinite Solution:
$-4(2x + 1) = -8x - 2$ $\begin{array}{r l} -\cancel{8x} - 4 = -\cancel{8x} - 2 & \\ +\cancel{8x} & +\cancel{8x} \\ \hline -4 = -2 & \end{array}$	$-5 - 9x = 3(1 - 3x) - 8$ $\begin{array}{r l} -5 - 9x = 3 - 9x - 8 & \\ -5 - 9x = -5 - 9x & \\ +9x & +9x \\ \hline -5 = -5 & \end{array}$
<p>There is <b>no possible number</b> that could work as a solution to the equation!</p>	<p><b>Every number</b> could work as a solution!</p>

no sol.  
 $\emptyset$

inf. sol.  
 $\infty$

## More Examples!

<p><b>1</b></p> $3(2x + 2) - 3x = 6 + 3x$ $\begin{array}{r} 6x + 6 - 3x = 6 + 3x \\ 3x + 6 = 6 + 3x \\ -3x \quad \quad -3x \\ \hline 6 = 6 \end{array}$	<p><b>2</b></p> $6(2x - 6) = -7(-2x + 4)$ $\begin{array}{r} 12x - 36 = 14x - 28 \\ -12x \quad \quad -12x \\ \hline -36 = 2x - 28 \\ +28 \quad \quad +28 \\ \hline -8 = 2x \end{array}$
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$\frac{-8}{2} = \frac{2x}{2}$

$-4 = x$

3

$$8(5x - 3) = 6(-3x - 4)$$

$$40x - 24 = -18x - 24$$

$$\begin{array}{r} +18x \qquad \qquad +18x \\ \hline 58x - 24 = -24 \end{array}$$

$$\begin{array}{r} +24 \quad +24 \\ \hline 58x = 0 \end{array}$$

$$\frac{58x}{58} = \frac{0}{58}$$

$x = 0$

4

$$3x - 13 = 7(x + 2) - 4(x - 7)$$

$$3x - 13 = 7x + 14 - 4x + 28$$

$$3x - 13 = 3x + 42$$

$$\begin{array}{r} -3x \qquad \qquad -3x \\ \hline -13 = 42 \end{array}$$

