

Bellwork: Algebra 1

1. Write down your homework for the night.
2. Take out your homework from last night and be ready to check it.
3. You will need your composition book today.
4. Answer the following question:

$$4(2x - 10) = 2(4x - 13) - 14$$

$$8x - 40 = 8x - 26 - 14$$

$$8x - 40 = 8x - 40 \quad 8x = 8x$$

$$-8x$$

$$-8x$$

$$-40 = -40$$

Infinite
Solutions

$$\begin{array}{r}
 1. \quad 4x + 1 = 2x - 5 \\
 \quad -2x \quad -2x \\
 \hline
 2x + 1 = -5 \\
 \quad -1 \quad -1 \\
 \hline
 2x = -6 \\
 \quad \frac{2}{2} \quad \frac{-6}{2}
 \end{array}$$

$$x = -3$$

$$\begin{array}{r}
 2. \quad y - 3 = -3y - 43 \\
 \quad +3y \quad +3y \\
 \hline
 4y - 3 = -43 \\
 \quad +3 \quad +3 \\
 \hline
 4y = -40 \\
 \quad \frac{4}{4} \quad \frac{-40}{4}
 \end{array}$$

$$y = -10$$

$$\begin{array}{r}
 3. \quad 7 - 14m = 2m - 5 \\
 \quad +14m \quad +14m \\
 \hline
 7 = 16m - 5 \\
 +5 \quad \quad +5 \\
 \hline
 12 = 16m \\
 \quad \frac{12}{16} = \frac{16m}{16}
 \end{array}$$

$$\frac{3}{4} = m$$

$$\begin{array}{r}
 4. \quad -10b + 5 = 7b + 5 \\
 \quad +10b \quad +10b \\
 \hline
 5 = 17b + 5 \\
 -5 \quad \quad -5 \\
 \hline
 0 = 17b \\
 \quad \frac{0}{17} = \frac{17b}{17}
 \end{array}$$

$$0 = b$$

$$\begin{array}{r}
 5. \quad r + 15 = 4r - 6 \\
 \quad -r \quad \quad -r \\
 \hline
 15 = 3r - 6 \\
 +6 \quad \quad +6 \\
 \hline
 21 = 3r \\
 \quad \frac{21}{3} = \frac{3r}{3}
 \end{array}$$

$$7 = r$$

$$\begin{array}{r}
 6. \quad 10 - 2v = -5v - 50 \\
 \quad +5v \quad +5v \\
 \hline
 10 + 3v = -50 \\
 -10 \quad \quad -10 \\
 \hline
 3v = -60 \\
 \quad \frac{3v}{3} = \frac{-60}{3}
 \end{array}$$

$$v = -20$$

$$7. 3(5y + 1) = 18y$$

$$\begin{array}{r} 15y + 3 = 18y \\ -15y \quad -15y \\ \hline \end{array}$$

$$\frac{3}{3} = \frac{3y}{3}$$

$$\boxed{1 = y}$$

$$8. 4 - 3x = 8 - 4x$$

$$\begin{array}{r} +4x \quad +4x \\ 4 + x = 8 \\ -4 \quad -4 \\ \hline \end{array}$$

$$\boxed{x = 4}$$

$$9. 8(2w - 2) = 7(3w + 2)$$

$$\begin{array}{r} 16w - 16 = 21w + 14 \\ -16w \quad -16w \\ \hline \end{array}$$

$$\begin{array}{r} -16 = 5w + 14 \\ -14 \quad -14 \\ \hline \end{array}$$

$$\frac{-30}{5} = \frac{5w}{5}$$

$$\boxed{-6 = w}$$

$$10. 3(5x + 2) = 2(3x - 6)$$

$$\begin{array}{r} 15x + 6 = 6x - 12 \\ -6x \quad -6x \\ \hline \end{array}$$

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

$$\frac{9x}{9} = \frac{-18}{9}$$

$$\boxed{x = -2}$$

$$11. 6(m - 1) = 3(3m + 5)$$

$$\begin{array}{r} 6m - 6 = 9m + 15 \\ -6m \quad -6m \\ \hline \end{array}$$

$$\begin{array}{r} -6 = 3m + 15 \\ -15 \quad -15 \\ \hline \end{array}$$

$$\frac{-21}{3} = \frac{3m}{3}$$

$$\boxed{-7 = m}$$

$$12. 7(p + 3) + 9 = 5(p - 2) - 3p$$

$$7p + 21 + 9 = 5p - 10 - 3p$$

$$\begin{array}{r} 7p + 30 = 2p - 10 \\ -2p \quad -2p \\ \hline \end{array}$$

$$\begin{array}{r} 5p + 30 = -10 \\ -30 \quad -30 \\ \hline \end{array}$$

$$\frac{5p}{5} = \frac{-40}{5}$$

$$\boxed{p = -8}$$

$$\begin{array}{r} -4 = -2 \\ +2 \quad +2 \end{array}$$

NO SOLUTION & INFINITE SOLUTION

$$-2 = \emptyset$$

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

Solutions ∞

1

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

$$6x + 6 - 3x = 6 + 3x$$

$$3x + 6 = 6 + 3x$$

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

$$6 = 6$$

$$\infty$$
2

$$6(2x - 6) = -7(-2x + 4)$$

$$12x - 36 = 14x - 28$$

$$\begin{array}{r} -12x \qquad \qquad -12x \\ \hline \end{array}$$

$$-36 = 2x - 28$$

$$\begin{array}{r} +28 \qquad \qquad +28 \\ \hline \end{array}$$

$$-8 = 2x \quad x = -4$$

3

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

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

$$x = \emptyset$$

4

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

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

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

$$-3x$$

$$-3x$$

 ~~\emptyset~~

$$-13 = 42$$

1. $2x + 2x + 2 = 4x + 2$

2. $3(x - 1) = 2x + 9$

3. $2x + 8 = 2(x + 4)$