

# Special Equations: Infinite and No Solutions

<p>If an equation has <b>Infinite Solutions</b> what does that mean?</p> $9x - 3x + 8 = 18 - 10 + 6x$	<p>Check 2 Solutions</p>
<p>If an equation has <b>No Solution</b> what does that mean?</p> $2(4x - 3x) + 9 = -7 + 2x$	<p>Check 2 Solutions</p>

## Conclusion

Infinite Solutions: Equations will end \_\_\_\_\_

No Solution: Equations will end \_\_\_\_\_

**Some To Try**

$$7 = 6 - 4r + 4r$$

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

$$-28 = -7(3x + 4) + 21x$$

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

$$208 = 8(1 + 5x)$$

$$-11 + x = -7x - 8(-x + 1)$$

# Special Equations: Infinite and No Solutions

If an equation has **Infinite Solutions** what does that mean?

Any # will be a solution

$$9x - 3x + 8 = 18 - 10 + 6x$$

$$\begin{array}{r} \overbrace{6x + 8} \\ - 8 \\ \hline 6x \end{array} = \begin{array}{r} \overbrace{8 + 6x} \\ - 8 \\ \hline 6x \end{array}$$

$$6x = 6x$$

Infinite Solutions

No

Check 2 Solutions

$$9(5) - 3(5) + 8 = 18 - 10 + 6(5)$$

$$45 - 15 + 8 = 18 - 10 + 30$$

$$38 = 38 \checkmark$$

$$9(2) - 3(2) + 8 = 18 - 10 + 6(2)$$

$$18 - 6 + 8 = 18 - 10 + 12$$

$$20 = 20 \checkmark$$

If an equation has **No Solutions** what does that mean?

No # will be a solution

$$2(4x - 3x) + 9 = -7 + 2x$$

$$8x - 6x + 9 = -7 + 2x$$

$$\begin{array}{r} \overbrace{2x + 9} \\ - 2x \\ \hline 9 \end{array} = \begin{array}{r} \overbrace{-7 + 2x} \\ - 2x \\ \hline -7 \end{array}$$

$$9 \neq -7$$

No Solution

Check 2 Solutions

$$2(4(10) - 3(10)) + 9 = -7 + 2(10)$$

$$2(10) + 9 = -7 + (2(10))$$

$$29 = 13$$

## Conclusion

Infinite Solutions: Equations will end  $x = x$

No Solution: Equations will end  $a \neq b$

Some To Try

$$7 = 6 - 4r + 4r$$

$$7 \neq 6$$

No Solution

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

$$3 \neq 3$$

Infinite Solutions

$$-28 = -7(3x + 4) + 21x$$

$$-28 = -21x - 28 + 21x$$

$$-28 = -28$$

Infinite Solutions

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

$$-4x - 7 = -2 + 4x$$

$$-7 = -2 + 8x$$

$$\frac{-5}{8} = \frac{8x}{8}$$

$$\boxed{\frac{-5}{8} = x}$$

$$208 = 8(1 + 5x)$$

$$208 = 8 + 40x$$

$$\frac{200}{40} = \frac{40x}{40}$$

$$\boxed{5 = x}$$

$$-11 + x = -7x - 8(-x + 1)$$

$$-11 + x = -7x + 8x - 8$$

$$-11 + x = x - 8$$

$$-11 \neq -8$$

No Solution