

# Lesson 6.7: One, Zero, or Infinite

## Targets

1. I can solve linear equations with one, zero, or infinite solutions.

## Here are some examples of one, zero, and infinite solutions.

One Solution	No Solution (Zero Solutions)	Infinite Solutions (All)
$x = 5$	$3 = 5$	$13 = 13$
$x + 5 = 12$	$x - 2 = x - 4$	$x + 5 = x + 5$

## How to tell if an equation has one, zero, or infinite solutions

First attempt this problem on your own. Then watch the video and copy his notes.

*Determine the number of solutions for each of these equations:*

Your attempt:

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

$$-7x + 3 = 2x + 2 - 9x$$

$$-7x + 3 = 2x + 2$$

Video Notes:

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

$$-7x + 3 = 2x + 2 - 9x$$

$$-7x + 3 = 2x + 2$$

## How to tell if an equation doesn't have a solution

First attempt this problem on your own. Then watch the video and copy his notes.

Your attempt:

$$8(3x + 10) = 28x - 14 - 4x$$

Video Notes:

$$8(3x + 10) = 28x - 14 - 4x$$

### How to make an equation with no solutions

First attempt this problem on your own. Then watch the video and copy his notes.

*Fill in the blanks with the appropriate numbers to make a linear equation with NO solutions:*

Your attempt:

$$-11x + 4 = \underline{\quad}x + \underline{\quad}$$

Video Notes:

$$-11x + 4 = \underline{\quad}x + \underline{\quad}$$

### How to make an equation with infinitely many solutions

First attempt this problem on your own. Then watch the video and copy his notes.

*Fill in the blanks to make a linear equation with INFINITE solutions:*

Your attempt:

$$4(x - 2) + x = 5x + \underline{\quad}$$

Video Notes:

$$4(x - 2) + x = 5x + \underline{\quad}$$

### **Khan Activity: Linear Equations with One, Zero, or Infinite Solutions**

Complete this activity on Khan.

### Exit Ticket

1. Have all your notes filled out above.
2. Complete the following Khan Academy Activities:
  - a. Linear Equations with One, Zero, or Infinite Solutions