Identifying Solutions

One Solution vs **Infinite** Solutions vs **No** Solution

For some equations there is just **one** answer that can be substituted in for the variable to make the equation true.

$$x + 5 = 5$$ The solution is ___0___

For some equations there is an **infinite** number of answers that can be substituted in for the variable to make the equation true.

$$1 \cdot x = x$$ Possible solutions: ___3, 10, 1000 . . .___

For some equations there is **no** answer that can be substituted in for the variable to make the equation true.

$$x + 4 = x - 4$$

Why? ___If you take the same number and add 4 and subtract 4 you will never get the same answer___

For each of these equations identify whether they have **one**, **infinite** or **no** solutions. If the equation has a solution, identify the solution.

1. $11 + x = 11$

    one Solution
    $x = 0$

2. $x + 5 = x + 4$

    No Solution

3. $x + 0 = x$

    Infinite solutions

4. $10x = 30$

    One solution
    $x = 3$

5. $x + 8 = x$

    No Solution

Use these equation and solution cards and match them.

★ All equations have a solution.

★ Some equations share a solution (no more than two equations for one solution)

Write your matches on the given table. (At the bottom are the pairs of equations that share a solution.)

Equation Cards

$\frac{1}{8}x = 8$	$x + 3.5 = 14.25$	$\frac{10}{x} = 0.1$
$11 + x = 11$	$\frac{x}{9} = 2$	$\frac{5}{8} = x + \frac{1}{2}$
$45 = 5x$	$5 = x + 5$	$10x = 30$
$\frac{x}{3} + 10 = 20$	$29 = x \cdot 29$	$\frac{x}{10} = 0.1$
$1x + 6 = 9$		

Solution Cards

$30 = x$	$x = 18$
$64 = x$	$x = 0$
$x = 100$	$x = 10.75$
$9 = x$	$x = 1$
$3 = x$	$x = \frac{1}{8}$

1.4 Identifying Solutions
Card Match Activity

Once you have found matches write them in the table below.

Equation Card(s)	Solution Card
$\frac{1}{8}x = 8$	$64 = x$
$x + 3.5 = 14.25$	$x = 10.75$
$\frac{10}{x} = 0.1$	$x = 100$
$45 = 5x$	$9 = x$
$\frac{x}{3} + 10 = 20$	$30 = x$
$\frac{x}{9} = 2$	$x = 18$
$\frac{5}{8} = x + \frac{1}{2}$	$x = \frac{1}{8}$
$29 = x \cdot 29$ $\frac{x}{10} = 0.1$	$x = 1$
$5 = x + 5$ $11 + x = 11$	$x = 0$
$1x + 6 = 9$ $10x = 30$	$3 = x$