"I Understand that Solving an Equation means to find the Value that makes it true."

Determining if a Solution Makes the Equation True

Solve the following Equation:

$x+15-6=20$	**Can $x=12$?**	**Can $x=3$?**

Conclusion:

Equations can only have _____ Solution.

Determine if the Solution makes each Equation True.

1 **Does $x=5$?** $4x-3=17$

2 **Does $x=7$?** $24-x=7$

3 **Does $x=6$?** $20+4x=44$

4 For which equation does $p = 12$?

$3p = 4$ $2(p - 5) = 14$

5 For which equation does $p = 9$?

$\frac{45}{p} + p = 18$ $\frac{p+7}{4} = 4$

6 The set of numbers 7, 11, and 36 contains values for *x*. What value of *x* makes the equation below true?

$4x + 8 = 36$

7 Can you determine the value that makes this equation true?

$7x - 12 = 44$

"I Understand that Solving an Equation means to find the Value that makes it true."

Determining if a Solution Makes the Equation True

Solve the following Equation:

$x + 15 - 6 = 20$

$+6 \quad +6$

$X + 15 = 26$

$-15 \quad -15$

$X = 11$

Can $x = 12$?

$12 + 15 - 6 \stackrel{?}{=} 20$

$27 - 6 \stackrel{?}{=} 20$

$21 \neq 20$

NO!

Can $x = 3$?

$3 + 15 - 6 \stackrel{?}{=} 20$

$18 - 6 \stackrel{?}{=} 20$

$12 \neq 20$

NO!

Conclusion:

Equations can only have ONE Solution.

Determine if the Solution makes each Equation True.

1 Does $x = 5$?

$4x - 3 = 17$

$4 \cdot 5 - 3 \stackrel{?}{=} 17$

$20 - 3 \stackrel{?}{=} 17$

$17 = 17$ ✓

YES

2 Does $x = 7$?

$24 - x = 7$

$24 - 7 \stackrel{?}{=} 7$

$17 \neq 7$

NO

3 Does $x = 6$?

$20 + 4x = 44$

$20 + 4 \cdot 6 \stackrel{?}{=} 44$

$20 + 24 \stackrel{?}{=} 44$

$44 = 44$ ✓

YES

4 For which equation does $p = 12$?

$3p = 4$

$3 \cdot 12 \stackrel{?}{=} 4$

$36 \neq 4$

$2(p-5) = 14$

$2(12-5) \stackrel{?}{=} 14$

$2 \cdot 7 \stackrel{?}{=} 14$

$14 = 14$ ✓

5 For which equation does $p = 9$?

$\frac{45}{p} + p = 18$

$\frac{45}{9} + 9 \stackrel{?}{=} 18$

$5 + 9 \stackrel{?}{=} 18$

$14 \neq 18$

$\frac{p+7}{4} = 4$

$\frac{9+7}{4} \stackrel{?}{=} 4$

$\frac{16}{4} \stackrel{?}{=} 4$

$4 = 4$ ✓

6 The set of numbers 7, 11, and 36 contains values for *x*. What value of *x* makes the equation below true?

$4x + 8 = 36$

Try 7

$4 \cdot 7 + 8 \stackrel{?}{=} 36$

$28 + 8 \stackrel{?}{=} 36$

$36 = 36$ ✓

Try 11

$4 \cdot 11 + 8 \stackrel{?}{=} 36$

$44 + 8 \stackrel{?}{=} 36$

$52 \neq 36$

Try 36

$4 \cdot 36 + 8 \stackrel{?}{=} 36$

$144 + 8 \stackrel{?}{=} 36$

$152 \neq 36$

7 Can you determine the value that makes this equation true?

$7x - 12 = 44$

Try 5

$7 \cdot 5 - 12 \stackrel{?}{=} 44$

$35 - 12 \stackrel{?}{=} 44$

$23 \neq 44$

Need Bigger

Try 9

$7 \cdot 9 - 12 \stackrel{?}{=} 44$

$63 - 12 \stackrel{?}{=} 44$

$51 \neq 44$

Need Smaller

Try 8

$7 \cdot 8 - 12 = 44$

$56 - 12 = 44$

$44 = 44$ ✓