

Lesson 6: Solutions of a Linear Equation

$x = \sim$

Classwork

Exercises

Find the value of x that makes the equation true.

1. $17 - 5(2x - 9) = -(-6x + 10) + 4$

$$\begin{array}{r}
 \boxed{17} - 10x + \boxed{45} = 6x - 10 + 4 \\
 62 - 10x = 6x - 6 \\
 \quad + 10x \quad + 10x \\
 \hline
 62 = 16x - 6 \\
 \quad + 6 \quad \quad + 6 \\
 \hline
 68 = 16x \\
 \frac{68}{16} = \frac{16x}{16} \\
 4.25 = x \\
 x = 4\frac{1}{4}
 \end{array}$$

2. $-(x - 7) + \frac{5}{3} = 2(x + 9)$

- ① Distribute
- ② C. L. T
- ③ Move all X's to one side
- ④ Move all #'s to the other side
- ⑤ Solve

3. $\frac{4}{9} + 4(x - 1) = \frac{28}{9} - (x - 7x) + 1$

4. $5(3x + 4) - 2x = 7x - 3(-2x + 11)$

$$\begin{array}{r}
 \boxed{15x} + 20 - \boxed{2x} = 7x + 6x - 33 \\
 13x + 20 = 13x - 33 \\
 -13x \quad \quad -13x \\
 \hline
 20 = -33
 \end{array}$$

~~20 = -33~~
 No Solution

~~12 = 12~~
 infinite # of solutions

$$\begin{aligned}
 5. \quad 7x - (3x + 5) - 8 &= \frac{1}{2}(8x + 20) - 7x + 5 \\
 7x - 3x - 5 - 8 &= 4x + 10 - 7x + 5 \\
 4x - 13 &= -3x + 15 \\
 +3x & \quad +3x \\
 \hline
 7x - 13 &= 15 \\
 +13 & \quad +13 \\
 \hline
 7x &= 28 \\
 \frac{7x}{7} &= \frac{28}{7} \\
 x &= 4
 \end{aligned}$$

6. Write at least three equations that have no solution.