

Lesson 2.1- SWBAT solve two step equations.

Kickoff: Solve and check each of the following equations.

$(\frac{4}{2})^{\frac{2}{4}}x = 10$  ( $\frac{4}{2}$ )

$x = 20$

Check

$\frac{2}{4}x = 10$

$\frac{2}{4}(20) = 10$

$10 = 10 \checkmark$

$2)x - 5 = -9$

$x = -4$

Check

$x - 5 = -9$

$(-4) - 5 = -9$

$-9 = -9 \checkmark$

$(\frac{2}{7})^{\frac{1}{2}}x = -7$  ( $\frac{2}{7}$ )

$x = -14$

Check

$\frac{x}{2} = -7$

$(\frac{-14}{2}) = -7$

$-7 = -7 \checkmark$

$4)x \left( \frac{6}{9} - \frac{4}{3} \right)$

$x = \frac{2}{3}$

Check

$x + \frac{6}{9} = \frac{4}{3}$

$(\frac{2}{3}) + (\frac{6}{9}) = \frac{4}{3}$

$\frac{4}{3} = \frac{4}{3} \checkmark$

Inverse Operations- **Opposite Operation**

Operation	Inverse Operation
Addition	—
Subtraction	+
Multiplication	÷
Division	×

Steps to Solving Equations

- 1) Simplify both sides of the equal sign.
- 2) Find inverse operation (addition/subtraction first)
- 3) Perform the inverse operation.
- 4) Draw a line and cross out what you can.
- 5) Bring down everything else.
- 6) Repeat!

Examples:

Solve and check each of the following equations.

1)  $3x + 5 = 20$

$x = 5$

Check

$3x + 5 = 20$

$3(5) + 5 = 20$

$20 = 20 \checkmark$

2)  $-12 = 2a + 4$

$a = -8$

Check

$-12 = 2a + 4$

$-12 = 2(-8) + 4$

$-12 = -12 \checkmark$

3)  $6b + 2 = 44$

$b = 7$

Check

$6b + 2 = 44$

$6(7) + 2 = 44$

$44 = 44 \checkmark$

4)  $\frac{x}{6} - 5 = 12$

$x = 102$

Check

$\frac{x}{6} - 5 = 12$

$(\frac{102}{6}) - 5 = 12$

$12 = 12 \checkmark$

5)  $-13 = 2x - 12$

$x = -\frac{1}{2}$

6)  $\frac{3}{4}x + \frac{1}{2} = \frac{7}{2}$

$x = 4$

7)  $-4 = \frac{r}{20} - 5$

$r = 20$

8)  $\frac{x+9}{3} = 8$  (3)

$x = 15$

Check

$\frac{x+9}{3} = 8$

$\frac{15+9}{3} = 8$

$\frac{24}{3} = 8$

$8 = 8 \checkmark$

9)  $-\frac{6}{4} + \frac{x}{4} = -5$       Check  
 $\frac{x}{4} = 1$  (4)       $-6 + \frac{x}{4} = -5$   
 $x = 4$        $-5 = -5$  ✓

10)  $\frac{x}{4.4} + 10.2 = 12.7$       Check  
 $\frac{x}{4.4} = 2.5$  (4.4)  $2.5 \cdot 4.4 = 11$   
 $x = 11$

11)  $2 + \frac{16}{11}n = 2$       Check  
 $n = 0$

12)  $-7m + 1 = -97$       Check  
 $m = 14$

13)  $\frac{10+x}{7} = 1$  (4)      Check  
 $10+x = 7$   
 $-10 \quad -10$   
 $x = -3$

14)  $17 - 20x = -563$       Check  
 $x = 29$