Solving One-Step EQUATIONS – Addition/Subtraction

- An equation is a math sentence that **DOES** contain an _________________.
- The goal of solving an equation is to **find the value of the variable**.
  - We do this by **isolating** the variable on one side of the equation using **Inverse Operations**!
    - **Inverse operations** “undo” each other!
      
      Inverse of addition? ________________________
      Inverse of subtraction? ________________________
      Inverse of multiplication? ________________________
      Inverse of division? ________________________

Examples:

John has $x$ apples. If he adds 5 apples to his pile, he will have 8 apples. What is the value of $x$?

**Write an equation:**

\[
x + 5 = 8
\]

\[
-5 = -5
\]

\[
x = 3
\]

**Answer:** John had 3 apples before he added to his pile.

Check: \[3 + 5 = 8\]

Maddie has $x$ dollars. After spending $90 on a purse, she will have $45. What is the value of $x$?

**Write an equation:**

\[
x - 90 = 45
\]

\[
+90 = +90
\]

\[
x = 135
\]

**Answer:** Maddie had $135 before she bought the purse.

Check: \[135 - 90 = 45\]

Let’s Practice!

1. \[x + 2 = 10\]

   \[
x + 0 = \underline{8}
   \]

   **Check:**

2. \[y - 8 = 15\]

   \[
y - 0 = \underline{17}
   \]

   **Check:**

3. \[a + 9 = 2\]

   \[
a + 0 = \underline{-7}
   \]

   **Check:**
Math 6 Practice (8.1)

Solve

1) \( x + 7 = 18 \)  
2) \( a - 15 = 22 \)  
3) \( 83 = y - 17 \)

4) \( c - 3 = 6 \)  
5) \( x + 8 = 18 \)  
6) \( y - 5 = 4 \)

7) \( 6 + z = 10 \)  
8) \( p - 5 = 15 \)  
9) \( 4 + m = 12 \)

10) \( g + 44 = 50 \)  
11) \( x - 9 = 2 \)  
12) \( a + 10 = 17 \)

13) \( y - 4 = 19 \)  
14) \( b - 17 = 12 \)  
15) \( 3 = d + 2 \)

16) \( i + 13 = 27 \)  
17) \( y - 4 = 6 \)  
18) \( x + 5 = 8 \)

19) \( x - 4 = 9 \)  
20) \( 24 = n + 13 \)  
21) \( d - 9 = 11 \)
Solving One-Step Equations: Addition and Subtraction

You must show your work to get credit! Check your answer.

1) $y + 6 = 20$
2) $x - 10 = 12$
3) $12 + z = 15$

4) $2 + n = 16$
5) $a + 4 = 14$
6) $m - 5 = 10$

7) $4 + b = 30$
8) $10 + c = 25$
9) $x - 60 = 20$

10) $g - 16 = 4$
11) $x - 15 = 20$
12) $w + 14 = 18$

13) $r - 18 = 27$
14) $13 + k = 25$
15) $f - 16 = 34$
Solve each equation. Check your solution.

1. \( x + 2 = 8 \)
2. \( y + 7 = 9 \)
3. \( a + 5 = 12 \)

4. \( 16 = n + 6 \)
5. \( q + 10 = 22 \)
6. \( m + 9 = 17 \)

7. \( b - 4 = 9 \)
8. \( 8 = c - 4 \)
9. \( 11 = t - 7 \)

10. \( d - 10 = 8 \)
11. \( x - 11 = 9 \)
12. \( 2 = z - 14 \)

13. \( 72 = 24 + w \)
14. \( 86 + y = 99 \)
15. \( 6 + y = -8 \)

16. \( -5 = m + 11 \)
17. \( n + 3.5 = 6.7 \)
18. \( x + 1.6 = 0.8 \)

19. \( 98 = t - 18 \)
20. \( 12 = g - 56 \)
21. \( x - 18 = -2 \)

22. \( p - 11 = -5 \)
23. \( a - 1.5 = 4.2 \)
24. \( 7.4 = n - 2.6 \)