What Is Solving and Explaining Two-Step Equations Involving Whole Numbers and Using Inverse Operations?

- An algebraic equation is an expression in which a letter represents an unknown number such as, n + 5 = 11 (n = 6).

- An inverse operation is one that "undoes" or reverses another. Addition and subtraction are inverse operations, and so are multiplication and division.

- Using an inverse operation allows us to calculate the value of the unknown number by moving all the known numbers to one side of the equation.

- T〔...〕. To s〔...〕from b〔...〕

How t〔...〕ers by us〔...〕

- T〔...〕itself o〔...〕e c〔...〕

- A〔...〕to one side must be done to the other. To solve this problem:

  - **n – 6 = 4**
  - Add 6 to both sides of the equation because addition is the inverse of subtraction
  - **n = 10**.

- Just as addition and subtraction are inverse operations, so are multiplication and division. To solve this problem:

  - **6n = 30**
  - Divide both sides of the equation by 6 because division is the inverse of multiplication
  - **n = 5.**

- When solving two-step equations, first add or subtract both sides using the inverse operation of the one in the equation. **Addition and subtraction are ALWAYS done first.**

- H
  s   eration
  i   ration
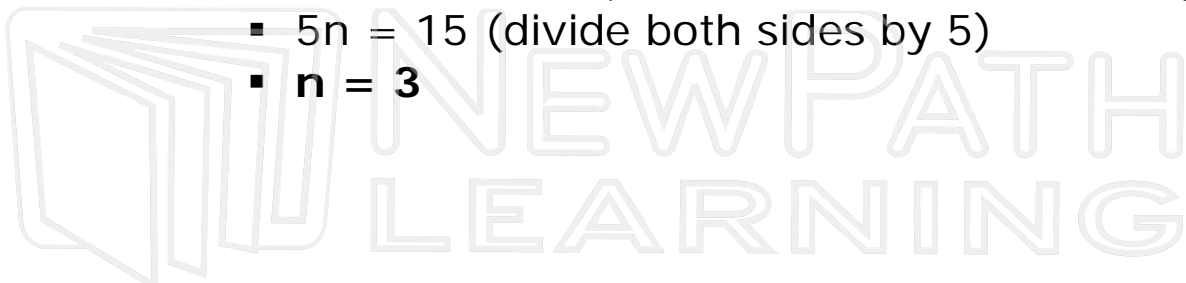 i

  - n/8 = 16 (multiply both sides by 8)
  - **n = 128**

  - **5n + 5 = 20** (subtract 5 from both sides)
  - 5n = 15 (divide both sides by 5)
  - **n = 3**

Try This!

$12n - 5 = 31$

_____

$n/7 + 5 = 31$

_____

$9n +$

_____

$n/6 - 18 = 2$

_____

$3n - 14 = 16$

_____