Lesson 8 (4.1) – Solving Simple Equations

An expression is ____________________________

An equation is ____________________________

A solution is ____________________________

To ______ an equation means to __________ the variable. When isolating a variable in an equation, you move ______ over the equal sign by using __________ operations.

Example 1: Solve (remember: isolate the variable) and check (substitute solution into equation)

a) \( x + 3 = 10 \)

b) \( 2m = 16 \)
Try: Solve

a) \( x + 4 = 9 \)  
   
   b) \( -9p = 81 \)

\[ \frac{1}{3}x = -3 \]
\[ \frac{1}{4} = m - \frac{3}{4} \]

c) \( \frac{1}{3}x = -3 \)
   
   d) \( \frac{1}{4} = m - \frac{3}{4} \)

To solve two-step equations:
   
   • Isolate the term with the variable
   • Isolate the variable

Example 2: Solve and check.

a) \( 5x + 2 = 17 \)  
   
   b) \( 8 - 2b = 11 \)

Try: Solve and check

\( 7x - 5 = 16 \)
Example 3: Solve and check

a) \( \frac{x}{3} + 4 = 10 \)

b) \( 4(x - 3) = 15 \)

A “Let Statement” is: _______________________________________________________________

Modeling with Equations

A dance studio director is given $3025 to buy recital costumes for the Saturday morning pre-ballet classes. If each costume costs approximately $40, how many students can she outfit?

a) Write an equation that models the number of costumes she can buy.

b) Solve the equation and write a conclusion to the problem.