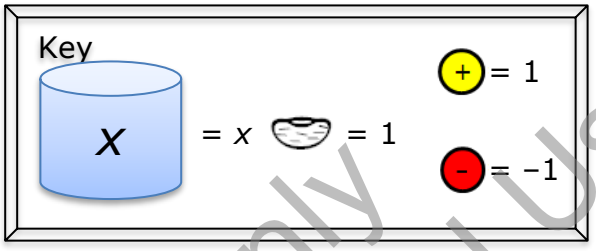
Name_____ Date _____

Modeling, Solving & Representing Solutions on Number Lines

Independent Practice

Directions: For each problem situation below, write an equation you can use to solve the problem. Use cups and counters to solve the equation. Represent the solution on a number line and use substitution to verify your solution.



1. Josh is thinking of a number. Five more than twice his number equals 17. What number is Josh thinking of?

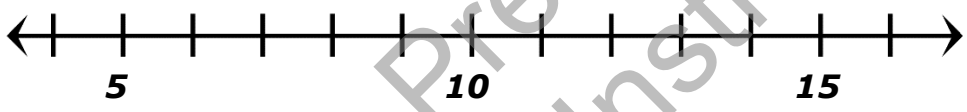
a) Write the equation.

b) Solve the equation using cups and counters. Sketch each step.

Model	Symbols

Name_____ Date _____

c) Represent the solution on a number line.



d) Use substitution to determine whether 4, 6, or 8 are solutions to the equation.

Name_____ Date _____

2. A rectangle has a length of 8 meters and a perimeter of 20 meters. What is the width, x, of the rectangle?

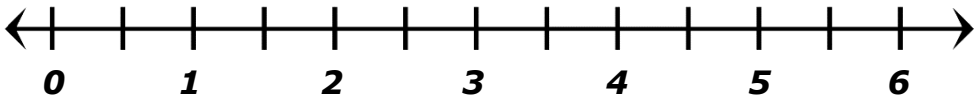
a) Write the equation.

b) Solve the equation using cups and counters. Sketch each step.

Model	Symbols

Name_____ Date _____

c) Represent the solution on a number line.



d) Use substitution to determine whether 2, 4, or 6 are solutions to the equation.

3. Maria's age is 4 years less than three times Jackson's age. Maria is 23 years old. How old is Jackson?

a) Write the equation.

b) Solve the equation using cups and two-color counters. Sketch each step.

Model	Symbols

Name_____ Date _____

c) Represent the solution on a number line.

d) Use substitution to determine whether 6, 9, or 12 are solutions to the equation.

Name_____ Date _____

4. Amanda and two friends each earned the same amount of money from their combined garage sale. After Amanda spent $2 out of her earnings she had $12 left. How much money, x, did the combined garage sale earn?

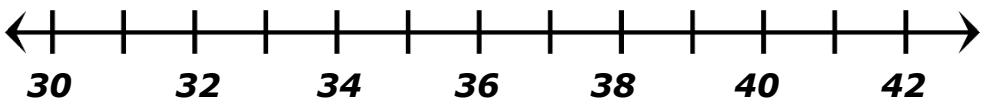
a) Write the equation.

b) Solve the equation using cups and counters. Sketch each step.

Model	Symbols

Name_____ Date _____

c) Represent the solution on a number line.



d) Use substitution to determine whether 39, 42, or 45 are solutions to the equation.

Debriefing Questions

1. How did you use the model to represent each expression?

2. For equations with a sum or difference, how did you determine the value of x?

3. For equations with a product, how did you determine the value of x?

4. For equations with a quotient, how did you determine the value of x?