

Algebra II
Auch

Section 2.1
Date:

Objectives

- Solve linear equations using a variety of methods.
- Solve linear inequalities.

Vocabulary:

- Equation -
- Solution set of an equation -
- Linear equation in one variable –

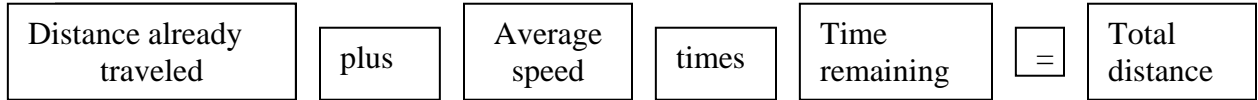
Properties of Equality

For all real numbers a, b, c,		
Words	Numbers	Algebra
Addition		
Subtraction		
Multiplication		
Division		

Example 1

Steve Fossett set a 24-hour hot-air record of 3186.8 miles on July 1, 2002. Suppose a balloonist has traveled 1239 miles in 10.5 hours. What speed would the balloonist need to average during the remaining 13.5 hours to tie the record?

Let v represent the speed in miles per hour the balloonist will need to average.



Solve: $1239 + 13.5v = 3186.8$

Example 2, Solving Equations with the Distributive Property

Solve: $5(y - 7) = 25$

Method 1

Method 2

Try it!

Solve: $3(2 - 3p) = 42$

Solve: $-3(5 - 4r) = -9$

Example 3, Solving Equations with Variables on Both Sides

Solve: $6y + 21 + 7 = 4y - 20 + 5y$

Try it!

Solve: $3(w + 7) - 5w = w + 12$

Example 4, Identifying Identities and Contradictions

Solve: $3x + 4x + 5 = 7x + 5$

Solve: $8(y + 7) = 6y - 8 + 2y$

Try it!

Solve: $5(x - 6) = 3x - 18 + 2x$

Solve: $3(2 - 3x) = -7x - 2(x - 3)$

Inequalities- Multiplying or Dividing by a Negative Number

For all real numbers a, b, c,		
Words	Numbers	Algebra

Example 5, Solving Inequalities

Solve and graph $9x + 4 < 12x - 11$

Check Test values in the original inequality

Try it!

Solve and graph $x + 8 \geq 4x + 17$