Algebra 1 6.3
Solve systems of equations by elimination system of equations
solve (x,y) Where do the two lines intersect?

substitution method zero pair additive inverse addition property of equality whiteboards

Quiz 6.1-6.2

$$5 = 5$$
  
x - 6 = 8  
 $3x - 6y = 3$ 

#### addition property

So if they are equal, is it OK to add the same thing to both sides?

$$\frac{X+6=8}{6}$$

Make zero pairs

# **Example 1** Elimination Using Addition

Use elimination to solve the system of equations.

$$4x + 6y = 32$$

$$3x - 6y = 3$$

$$7 \times = 35$$

$$3 \times = 35$$

$$3$$

## **Guided**Practice

1A. 
$$-4x + 3y = -3$$
  
 $-4x - 5y = 5$ 

$$-2y = 2$$

$$-2 + 5y = 5$$

$$4x - 5 - 1 = 5$$

$$4x + 5 = 5$$

$$-3 - 5 - 5$$

$$4x = 0$$

**1B.** 
$$4y + 3x = 22$$
  $3x - 4y = 14$ 

How can I make a zero pair?

Define your variables: x = first number y = second number

# **Example 2** Write and Solve a System of Equations



Negative three times one number plus five times another number is -11. Three times the first number plus seven times the other number is -1. Find the numbers.

Multiplication property of equality 5 = 5

### **Guided**Practice

3. Solve the system of equations.

How can I make a zero pair?

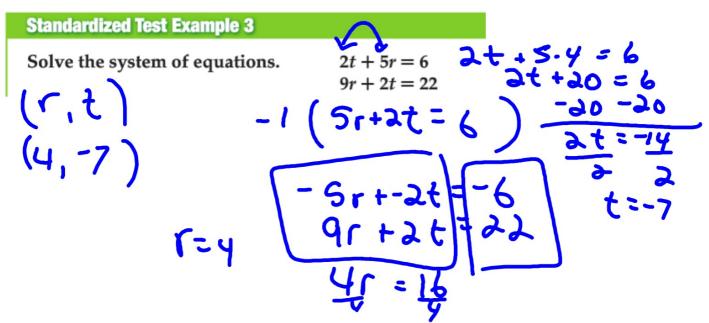
$$8b + 3c = 11 
8b + 7c = 7$$

$$8b + 3 - 7 = 7$$

$$8b + 3 = 7$$

$$9b + 3 =$$

## rearrange first



1. 
$$5m - p = 7$$
  
 $7m - p = 11$ 

Goal: make zero pair

**2.** 
$$8x + 5y = 38$$
  $-8x + 2y = 4$