Solving systems of equations:



5.1: by graphing

5.2: using substitution

What about this system of equations?

$$4x + 3y = 14$$

$$2x - 3y = -23$$

Solving by substitution will be quite "messy"?

Is there another way??

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$$4x + 3y = 14$$

$$4X = -3Y + 14/4$$

$$\frac{3y = -4x + 14}{3}$$

$$2x - 3y = -23$$

$$\frac{-3}{-3} \times \frac{-3}{-3} \times \frac{-3}{3}$$

get x by itself?

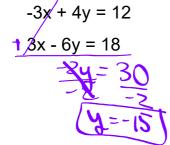
## 5.3 Solve a System of Equations by Elimination

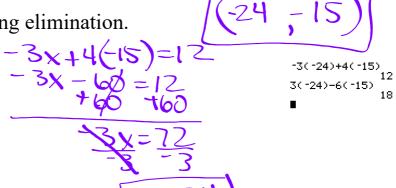
#### What You Will Learn

- Solve systems of linear equations by elimination.
- Use systems of linear equations to solve real-life problems.

### Example 1:

Solve the system using elimination.





Dec 18-2:20 PM

$$-3x + 4y = 12$$
+ 
$$3x - 6y = 18$$
-2y = 30
y = -15

Once you know y = -15, then you can substitute -15 in for y in either of the two equations.

$$-3x + 4(-15) = 12$$

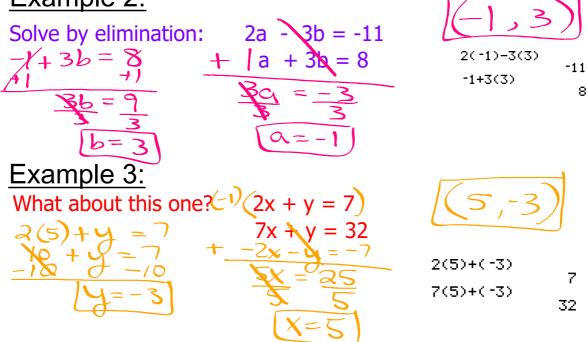
$$-3x + -60 = 12$$

$$-3x = 72$$

$$x = -24$$

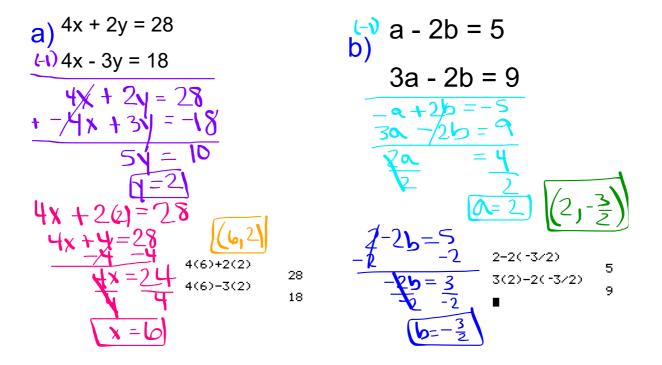
Final Answer: (-24,-15)

#### Example 2:



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### **YOUR TURN:** Solve for x and y using elimination.



# **5.3 Day One Worksheet**

A: all

B: all

C: odds