

**Additional Practice** *(continued)***Investigation 1****It's In the System**

2. The students at Susan B. Anthony Middle School wanted to encourage people to buy tickets to the spring musical early. Tickets purchased at the door cost \$6, and tickets purchased in advance only cost \$4. Receipts from ticket sales totaled \$2,000 and there were 410 tickets sold.
- a. Use  $x$  to represent the number of tickets sold at the door and  $y$  to represent the number of tickets sold in advance. Write a system of equations that represent the reported information about receipts from ticket sales and the total number of tickets.

Let  $x =$

Let  $y =$

find the number of tickets sold at the door and the number of tickets sold in advance.

**Skill: Writing Equations With Two Variables****Investigation 1****It's In the System**

1. The drama club sells 200 pounds of fruit to raise money. The fruit is sold in 5-pound bags and 10-pound bags.
  - a. Write an equation to find the number of each type of bag that the club should sell.

\_\_\_\_\_ find two different  
solution pairs for the equation.

2. The student council is sponsoring a carnival to raise money. Tickets cost \$5 for adults and \$3 for students. The student council wants to raise \$450.
  - a. Write an equation to find the number of each type of ticket they should sell.
3. Anna goes to a store to buy \$70 worth of flour and sugar for her bakery. A bag of flour costs \$5, and a bag of sugar costs \$7.
  - a. Write an equation to find the number of bags of each type Anna can buy.
4. You have \$50 to spend on cold cuts for a party. Ham costs \$5.99 per pound, and turkey costs \$4.99 per pound. Write an equation to relate the number of pounds of each kind of meat you could buy.

**Skill: Substitution Method for Linear Systems** (cont.)**Investigation 2****It's In the System**

Solve each system of equations using substitution.

5. 
$$\begin{aligned} 3x - 2y &= 0 \\ x + 2y &= -8 \end{aligned}$$

6. 
$$\begin{aligned} 2x + 4y &= -6 \\ x - 3y &= 7 \end{aligned}$$

7. 
$$\begin{aligned} 5x - 3y &= -4 \\ 5x + 3y &= -6 \end{aligned}$$

8. 
$$\begin{aligned} 3x - y &= 4 \\ 2x + y &= 16 \end{aligned}$$

**Skill: Combination Method for Linear Systems****Investigation 2****It's In the System**

Solve each system of equations by combination.

1.  $x + 2y = 7$   
 $3x - 2y = -3$

2.  $3x + y = 20$   
 $x + y = 12$

3.  $5x + 7y = 77$   
 $5x + 3y = 53$

4.  $2x + 5y = -1$   
 $x + 2y = 0$

**Skill: Combination Method for Linear Systems** (cont.)**Investigation 2****It's In the System**

Solve each system of equations by combination.

5. 
$$\begin{aligned} 3x + 6y &= 6 \\ 2x - 3y &= 4 \end{aligned}$$

6. 
$$\begin{aligned} 2x + y &= 3 \\ -2x + y &= 1 \end{aligned}$$

7. 
$$\begin{aligned} 4x - y &= 6 \\ 3x + 2y &= 21 \end{aligned}$$

8. 
$$\begin{aligned} 2x - 3y &= -11 \\ 3x + 2y &= 29 \end{aligned}$$

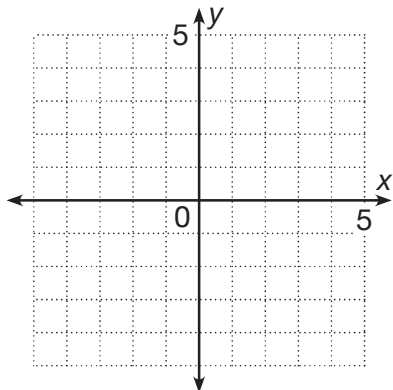
# Skill: Solving Linear Systems

## Investigation 3

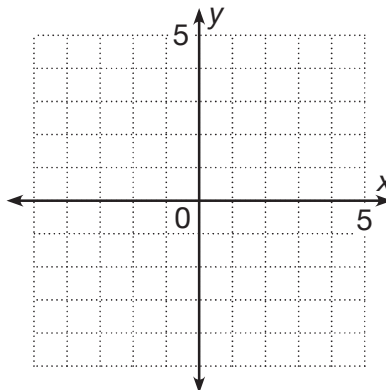
### It's In the System

Graph the pairs of equations. For each graph, estimate the point of intersection.

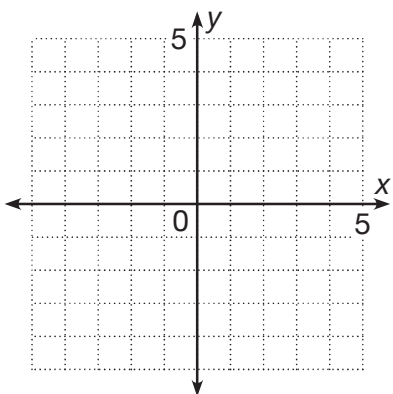
1.  $y = x + 2$   
 $y = 2x + 1$



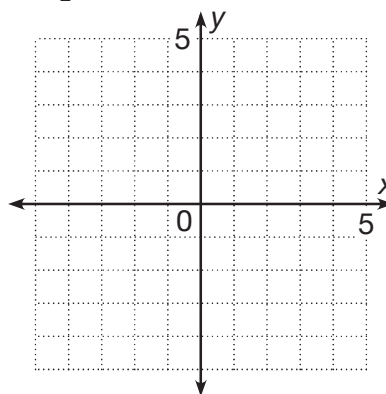
2.  $y = -2x + 2$   
 $y = 3x + 2$



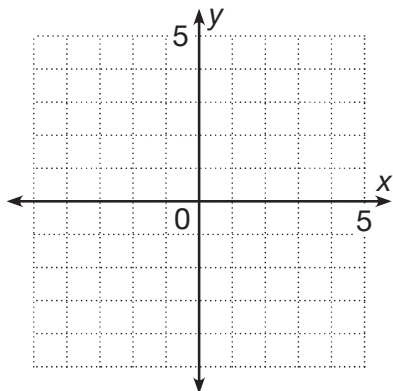
3.  $y = -\frac{1}{2}x - 1$   
 $y = x - 4$



4.  $y = 2x + 3$   
 $y = \frac{1}{2}x$



5.  $y = -\frac{3}{2}x + 2$   
 $y = \frac{1}{2}x - 2$



6.  $y = 2x - 5$   
 $y = \frac{1}{4}x + 2$

