

Lesson 4.3 ~ Solving Systems Using Tables

Name _____ Period _____ Date _____

Solve each system of equations using the given input-output tables.

1. $y = 4x - 3$

x	y
0	
1	
2	
3	
4	

$y = -2x + 15$

x	y
0	
1	
2	
3	
4	

SOLUTION: _____

2. $y = -3x + 1$

x	y
-4	
-3	
-2	
-1	
0	

$y = 2 - 2x$

x	y
-4	
-3	
-2	
-1	
0	

SOLUTION: _____

3. $y = x + 2$

x	y

$y = 3x - 6$

x	y

SOLUTION: _____

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

x	y

$y = 2x$

x	y

SOLUTION: _____

5. $y = -7 + 3x$

x	y

$y = 5x - 13$

x	y

SOLUTION: _____

6. $-2x + y = -1$

x	y

$y = 5(x + 2) - 2$

x	y

SOLUTION: _____

7. Mikayla put \$212 in a savings account at the beginning of the year. At the end of each month, she withdrew \$12 from her account. Matthew put \$30 in his savings account at the beginning of the year. At the end of each month, he deposited \$14 in his account. Let x represent the number of months which have passed and y represent the amount in each savings account.
- Write an equation to represent the amount in Mikayla's savings account.
 - Write an equation to represent the amount in Matthew's savings account.
 - On the back of this worksheet, make input-output tables that show the amount in each account for the first 8 months.
 - When will Mikayla and Matthew have the same amount in their accounts?

Lesson 4.3C ~ Solving Systems Using Tables

Name _____ Period _____ Date _____

Each system of equations has a solution whose x -value is not an integer. Use input-output tables to determine what two integers the x -value of the solution lies between.

1. $y = 3x + 2$

x	y
0	
1	
2	
3	
4	

$y = -2x + 13$

x	y
0	
1	
2	
3	
4	

Solution (x) between _____ and _____.

2. $y = 5x - 3$

x	y
0	
1	
2	
3	
4	

$y = 4x - 1.5$

x	y
0	
1	
2	
3	
4	

Solution (x) between _____ and _____.

3. $y = 0.2x + 3$

x	y

$y = x + 3.4$

x	y

Solution (x) between _____ and _____.

4. $y = -4x + 1$

x	y

$y = 0.5x + 13.6$

x	y

Solution (x) between _____ and _____.

5. $y = -5x + 8$

x	y

$y = -2x + 2.6$

x	y

Solution (x) between _____ and _____.

6. $y = -x - 13.4$

x	y

$y = x - 5$

x	y

Solution (x) between _____ and _____.

Lesson 4.4 ~ Solving Systems By Substitution

Name _____ Period _____ Date _____

Solve the system of equations using the substitution method. Check the solution.

1. $y = 2x + 1$
 $3x + 2y = 23$

2. $x + y = 6$
 $x = 3y - 2$

3. $-6x + 5y = 16$
 $x = 5 - 3y$

4. $4x - 3y = -15$
 $x + y = 5$

5. $-2x = y$
 $7x + 3y = 3$

6. $y + 2x = 3$
 $y - x = -9$

7. Reese picked two numbers, x and y . She told her friend that the sum of the two numbers is 9 and the difference of the two numbers is 17.

a. Write two different linear equations that model what Reese told her friend.

b. Solve the system of linear equations using the substitution method. What two numbers did Reese pick?

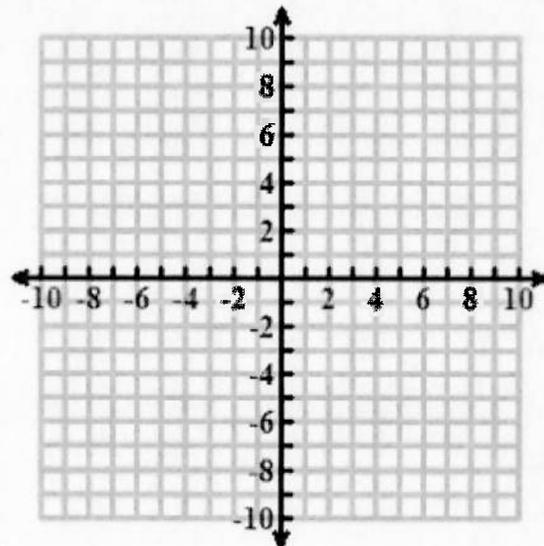
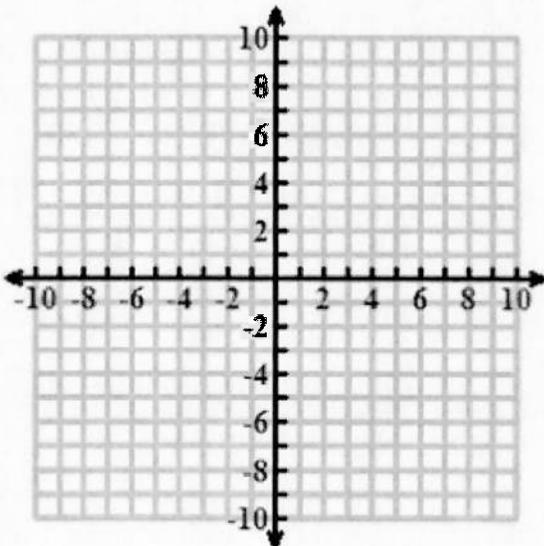
Lesson 4.4C ~ Solving Systems by Substitution

Name _____ Period _____ Date _____

Each set of three lines intersects to form a triangle. Use the substitution method to find the intersection point of each pair of lines in the set. List the three vertices of the triangle. Graph the triangle.

1. Line A: $y = 2x - 1$
Line B: $-x + 2y = 4$
Line C: $y = -4x - 7$

2. Line D: $y = 2x + 4$
Line E: $x = 4 - y$
Line F: $x - 2y = 4$



3. Create a system of three equations that intersect to form a triangle with integer coordinates for the vertices. List the three equations and the three ordered pairs of the vertices.

Lesson 4.5 ~ Solving Systems Using Elimination

Name _____ Period _____ Date _____

Solve each system of equations using the elimination method. Check the solution.

1.
$$\begin{aligned} 3x - 2y &= 10 \\ 7x + 2y &= 30 \end{aligned}$$

2.
$$\begin{aligned} -x + 5y &= 19 \\ x + 2y &= 16 \end{aligned}$$

3.
$$\begin{aligned} 3x + 4y &= 23 \\ 3x - 2y &= 11 \end{aligned}$$

4.
$$\begin{aligned} 10x - 6y &= 54 \\ -4x + 3y &= -24 \end{aligned}$$

5.
$$\begin{aligned} 6 &= 4x + 2y \\ -19 &= 4x - 3y \end{aligned}$$

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

7.
$$\begin{aligned} 3x + 8y &= 2 \\ 4x - 2y &= -10 \end{aligned}$$

8.
$$\begin{aligned} 2x - 4y &= 10 \\ -4x + 3y &= -20 \end{aligned}$$

Lesson 4.5C ~ Solving Systems Using Elimination

Name _____ Period _____ Date _____

Solve each system of equations using the elimination method. Both equations will need to be multiplied by a constant in order to solve. Check the solution.

1. $2x - 3y = 2$
 $3x + 2y = 16$

2. $-3x + 5y = 7$
 $4x + 2y = -18$

3. $4x + 3y = 15$
 $6x - 2y = -10$

4. $10x - 5y = 20$
 $-4x + 4y = -4$

5. $26 = 2x + 5y$
 $8 = 5x + 3y$

6. $5x - 7y = 3$
 $2x + 2y = 30$

Lesson 4.6 ~ Choosing the Best Method

Name _____ Period _____ Date _____

Choose the best method to solve each system of linear equations and explain your reasoning.

1. $y = 2x - 1$ Method: _____
 $y = -4 + 3x$ Reason: _____

2. $4x - 5y = 39$ Method: _____
 $y = 6x - 13$ Reason: _____

3. $3x + 2y = 8$ Method: _____
 $2x - 2y = -8$ Reason: _____

State the best method to solve each system of linear equations and then solve.

4. $y = x + 1$
 $2x + 4y = 28$

5. $3x - y = -1$
 $2x + y = -9$

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

7. $y = 296 - 10x$
 $y = 200 + 6x$

Lesson 4.6C ~ Choosing the Best Method

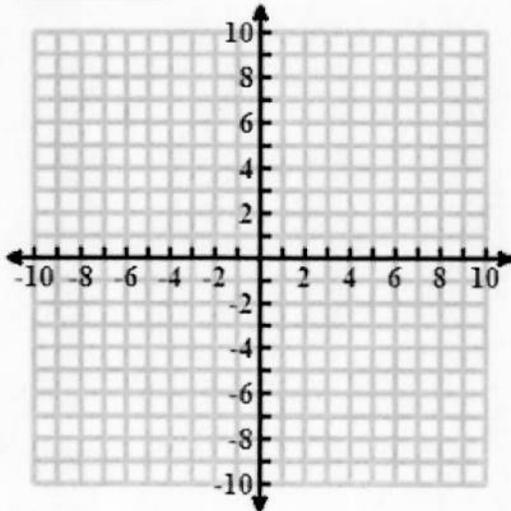
Name _____ Period _____ Date _____

1. Solve the following system of equations using all four methods. Every method should provide the same solution.

$$y = 2x + 1$$

$$2x + 4y = 24$$

GRAPHING



TABLES

x	y

x	y

SUBSTITUTION

ELIMINATION

2. Which method do you like best? _____ Why?

Lesson 4.7 ~ Applications of Systems of Equations

Name _____ Period _____ Date _____

Define the variables and develop a system of equations for each problem. Solve the system and check your solution. Write your answer in a complete sentence.

1. Two bike rental companies have different pricing systems. Company A charges a flat fee of \$4 plus \$2 per mile. Company B does not charge a flat fee but charges \$2.80 per mile driven. At what distance do both companies charge the same amount?
2. Two teachers, Mr. Meehan and Mrs. Chipps, decide to buy compasses and rulers for their classrooms. Mrs. Chipps buys 30 compasses and 50 rulers for \$95. Mr. Meehan buys 40 of each for \$116. What are the individual costs of the compasses and rulers that were purchased?
3. Lesley bought 4 bags of pretzels and 2 boxes of granola bars for \$13.50. Landon bought 1 bag of pretzels and 5 boxes of granola bars for \$17.55. What is the cost for one bag of pretzels? What is the cost for a box of granola bars?
4. SaveLots offers two types of baseball bats. The wood bats sell for \$24 and the metal bats sell for \$30. In one day, SaveLots sold 23 baseball bats. The receipts for those bats totaled \$606. How many of each type of bat were sold?

Lesson 4.7C ~ Applications of Systems of Equations

Name _____ Period _____ Date _____

Define the variables and develop a system of equations for each problem. Solve the system and check your solution. Write your answer in a complete sentence.

1. The Garrison's minivan gets 14 miles per gallon for city driving and 19 miles per gallon for highway driving. At the beginning of the week, the 24-gallon tank was full. The family drove 421 miles before running out of gas. How many gallons were used for city driving and how many were used for highway driving?
2. A piggy bank contains dimes and quarters. There are a total of 64 coins in the bank with a total value of \$10.30. How many of each type of coin are there in the piggy bank?
3. In triangle EFG the measure of angle E is four times the measure of angle F. The measure of angle G is 18° less than the measure of angle E. What is the measure of each angle? (Hint: the sum of the angles in a triangle is 180° .)
4. Dave, Frank and Kathy can process 1,300 catalog orders per day when all three of them are working. Dave and Frank can do 780 orders per day and Frank and Kathy can do 850 orders per day. How many can each do in a day?

Lesson 4.8 ~ Systems of Linear Inequalities

Name _____ Period _____ Date _____

Decide whether the given ordered pair is a solution to the system of linear inequalities.

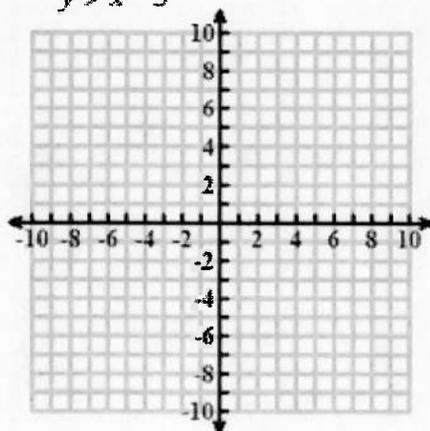
1. $y > x - 6$
 $y < x + 1$
 $(5, 2)$

2. $y \leq 2x$
 $y \geq x$
 $(-3, -6)$

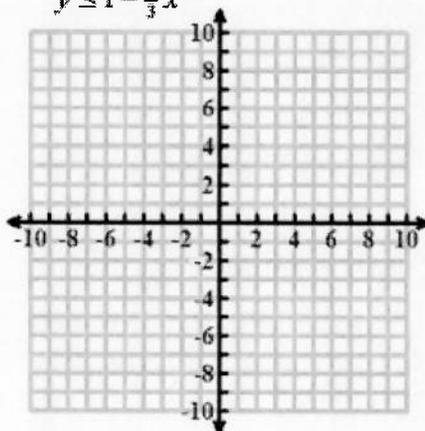
3. $\frac{1}{2}x + 3y < 8$
 $y \geq 1$
 $(0, \frac{2}{3})$

Graph the solution to each system of linear inequalities.

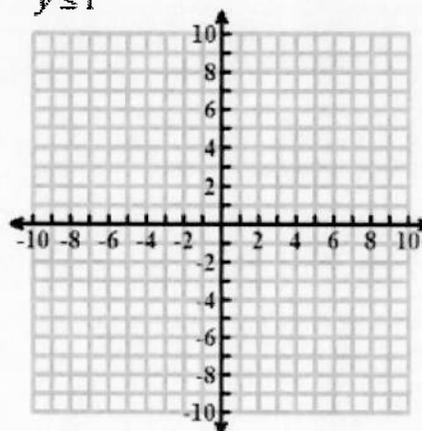
4. $y < -\frac{1}{2}x + 3$
 $y > x - 3$



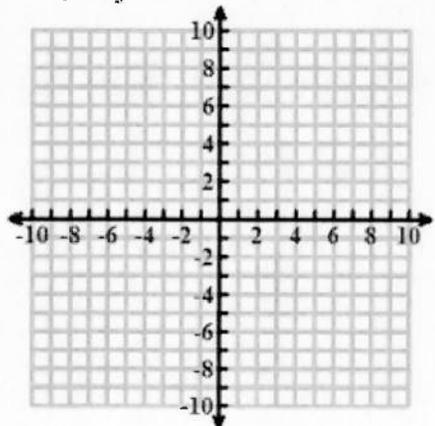
5. $y \leq \frac{4}{3}x - 2$
 $y \leq 1 - \frac{2}{3}x$



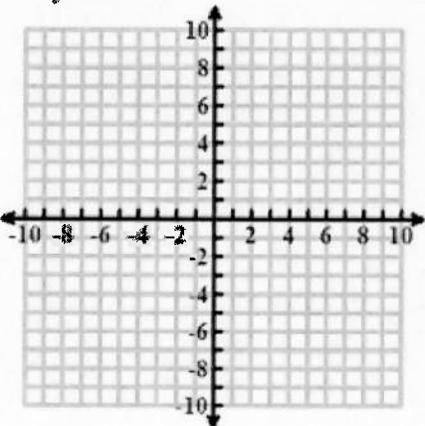
6. $y > 2x - 1$
 $y \leq 1$



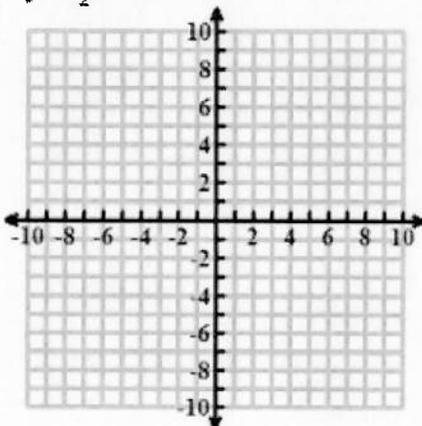
7. $y \leq -3x + 7$
 $y \geq \frac{1}{3}x + 4$



8. $y > -x$
 $y \leq x$



9. $5x + 2y < 10$
 $y < \frac{1}{2}x + 3$



Lesson 4.8C ~ Systems of Linear Inequalities

Name _____ Period _____ Date _____

Carlos is buying sausages and cherries for a family barbeque. One pound of sausage costs \$4. The cherries are \$3 per pound. He must spend less than \$60.

1. Write an inequality to represent the cost of Carlos's food for the barbeque.
2. Carlos' mom tells him he must buy at least 6 pounds of sausage. Write an inequality to represent this information.
3. Graph this system of inequalities. Label your axes.
4. Identify three possible solution points where Carlos buys whole number pounds of each item. Support your answer with words and/or mathematics.

7th Grade Advanced Math

Book 1: Linear Equations

Block 4: Systems of Equations

Independent Practice

Worksheet Packet

Name _____

Period _____