

- 1) Pam's Pie Pantry had 2 back-orders for cherry pies. Pam can bake 3 pies every hour. Fill in the blanks.

Hours	Pies
0	-2
—	—
—	—

- 2) Plot the points and connect them.

- 3) Write an equation for the line.

- 4) Sue had 3 flower arrangements completed when the photographer arrived to set up. Sue can complete 1 flower arrangement per hour. Fill in the blanks.

Hours	Arr.
0	3
—	—
—	—

- 5) Plot these points and connect them.

- 6) Write an equation for the line.

- 7) Tommy had completed 2 math word problems when his mother came home. Tommy can complete 4 math word problems per hour. Fill in the blanks.

Hours	Problems
0	2
—	—
—	—

- 8) Plot these points and connect them. (You will have to estimate the last point, as it is off the drawn graph.)

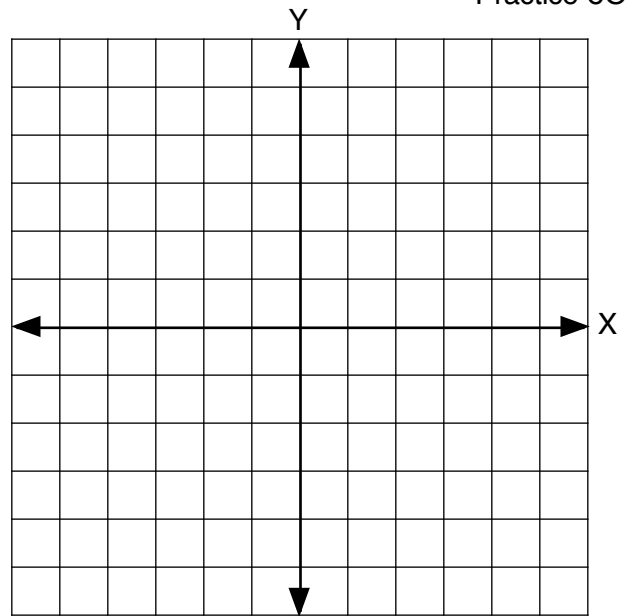
- 9) Write an equation for the line.

- 10) Fill in the blanks for the following equation:  
 $Y = 3X + 1$

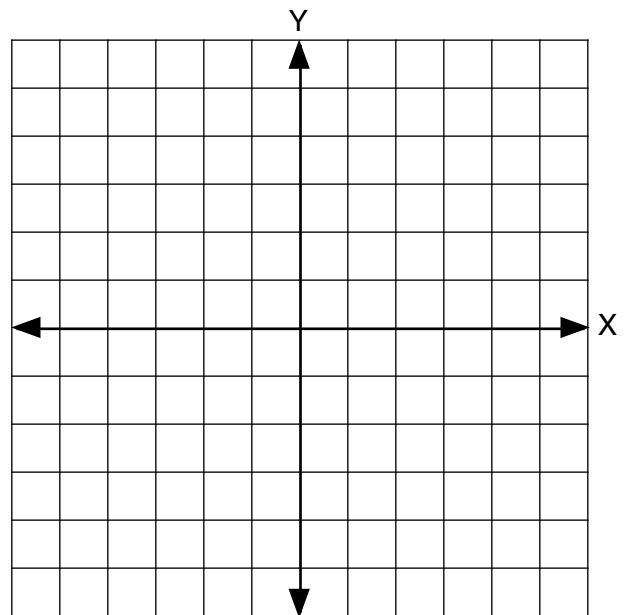
x	y
—	—
—	—
—	—

- 11) Plot the points and connect them

- 12) Write a word problem that fits the graph.



Questions 2 and 5



Questions 8 and 11

Fill in the blanks. The first two are done for you.

1) The slope of a horizontal line is 0.

Slope = rise/run = 0/run = 0 (0/any number is 0).

2) The slope of a vertical line is undefined.

Slope = rise/run = rise/0 = undefined (you cannot divide by zero)

3) The formula  $Y = mX + b$  is called the \_\_\_\_\_ formula.

4) Horizontal lines have a slope of \_\_\_\_\_.

5) The line  $Y = 4X - 5$  has a slope of \_\_\_\_\_.

6) The line  $Y = -3X + 2$  has a Y-intercept of \_\_\_\_\_.

7) Give an example of a line with a Y-intercept of 0.

Estimate the slope and intercept of the lines and match each with the most probable equation.

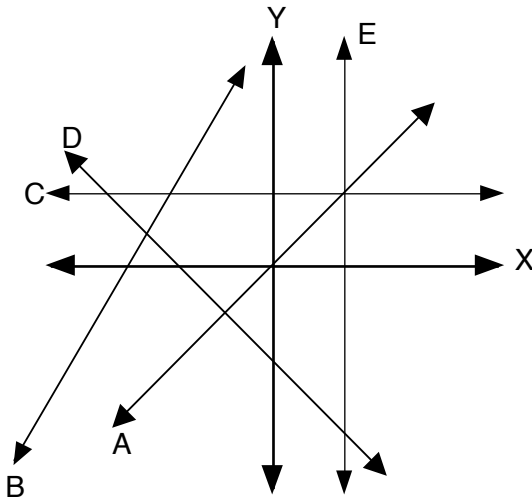
8)  $Y = 3$

9)  $X = 3$

10)  $Y = -X - 4$

11)  $Y = 2X + 6$

12)  $Y = X$



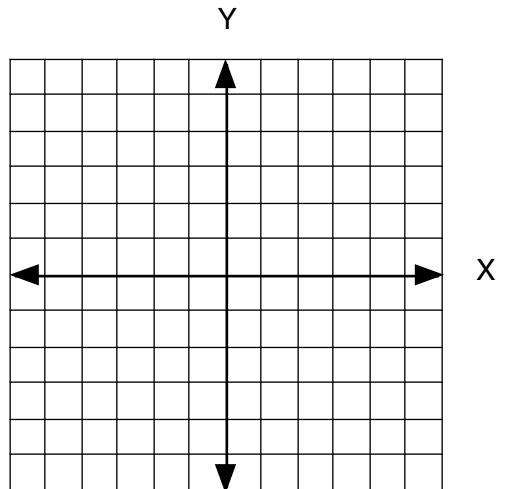
Draw a line for each of the equations.

13)  $X = -2$

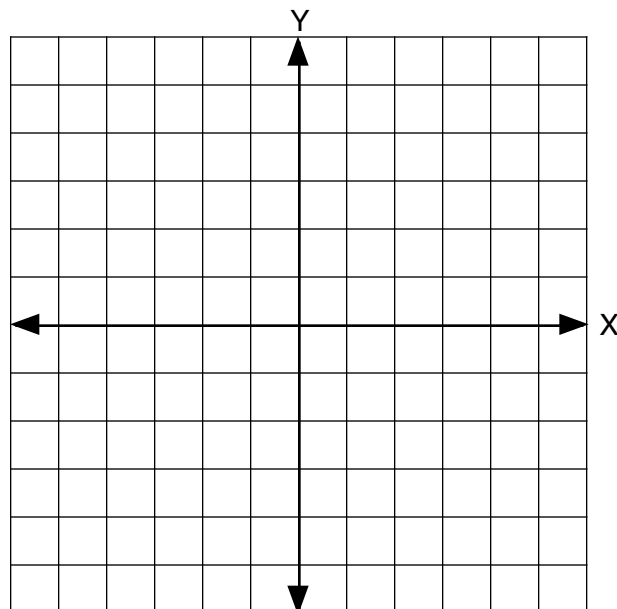
14)  $Y = -1$

15)  $Y = -X - 1$

16)  $Y = 1/2X + 2$



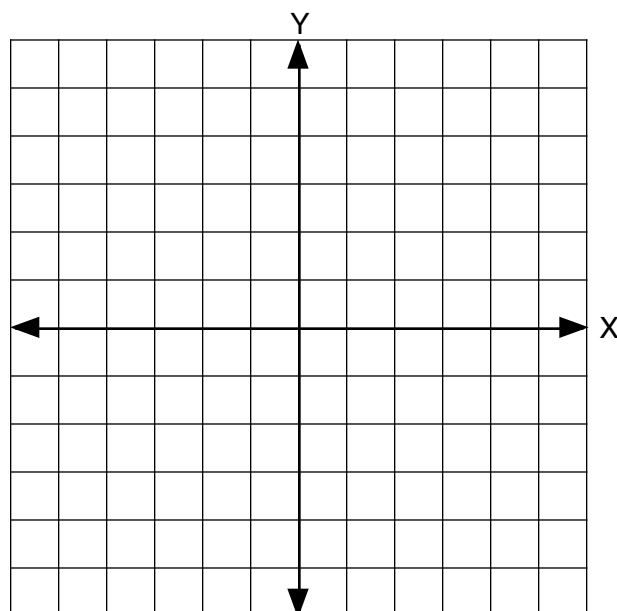
- 1) Plot the points  $(-1, 1)$  and  $(-2, 3)$ .
- 2) Make a right triangle and determine the slope.
- 3) Estimate the Y-intercept by extending the line until it intercepts the Y axis.
- 4) Describe the line with the slope-intercept form.
- 5) Which of the following lines are parallel to the line you drew? (There may be more than one answer.)
  - A)  $4Y = -8X + 3$
  - B)  $Y + 2X = 0$
  - C)  $Y - 2X = 4$



Problems 1 - 8

- 6) Draw a line parallel to the original line, but passing through  $(2, 1)$ .
- 7) Describe the new line with the slope-intercept form.
- 8) Describe the new line with the standard form of the equation of a line.

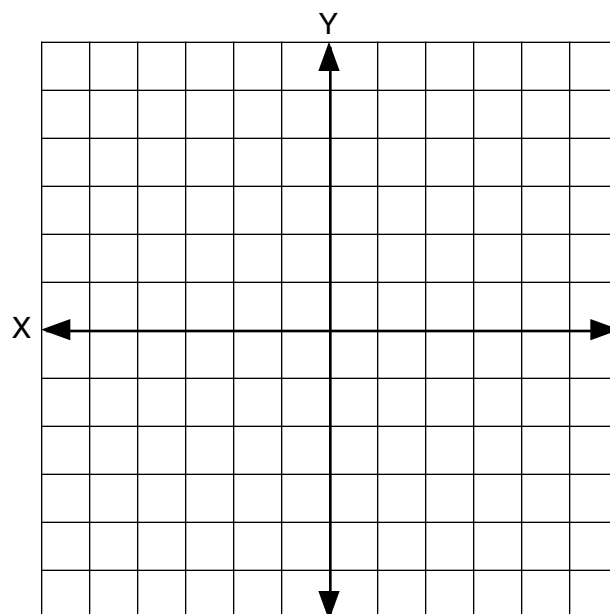
- 9) Plot the points  $(-4, -2)$  and  $(-2, -1)$ .
- 10) Make a right triangle and determine the slope.
- 11) Estimate the Y-intercept by extending the line until it intercepts the Y axis.
- 12) Describe the line with the slope-intercept form.
- 13) Which of the following lines are parallel to the line that you drew? (There may be more than one answer.)
  - A)  $3Y = -X + 3$
  - B)  $6Y = 3X + 3$
  - C)  $4Y = 2X + 1$



Problems 9 - 16

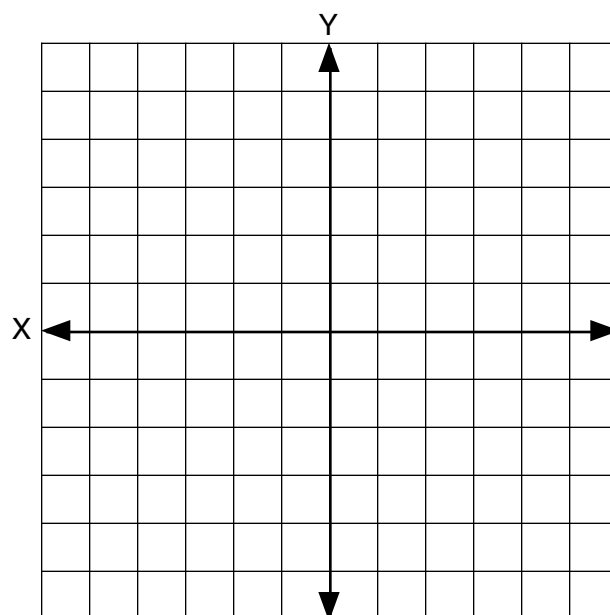
- 14) Draw a line parallel to the original line, but passing through  $(2, 3)$ .
- 15) Describe the new line with the slope-intercept form.
- 16) Describe the new line with the standard form of the equation of a line.

- 1) Plot the points (2, 2) and (1, 3).
- 2) Make a right triangle and determine the slope.
- 3) Extend the line and estimate the Y-intercept.
- 4) Describe the line with the slope-intercept form.
- 5) Which of the following lines is perpendicular to the line you drew? (There may be more than one answer).
  - A)  $Y = -X + 7$
  - B)  $2Y - 2X = 3$
  - C)  $Y = X$
- 6) Draw a line perpendicular to the original line, but passing through the point (-2, -3).
- 7) Describe the new line with the slope-intercept form.
- 8) Describe the new line with the standard form of the equation of a line.



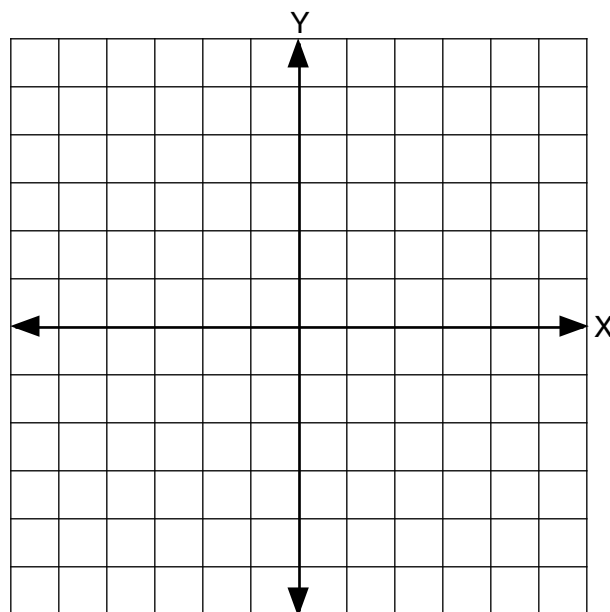
Problems 1 - 8

- 9) Plot the points (-4, -2) and (-2, -1)
- 10) Make a right triangle and determine the slope.
- 11) Extend the line and estimate the Y-intercept.
- 12) Describe the line with the slope-intercept form.
- 13) Which of the following lines is perpendicular to the line you drew? (There may be more than one answer).
  - A)  $6Y - 3X = 1$
  - B)  $4Y = 2X + 4$
  - C)  $2Y + 4X = 3$
- 14) Draw a line perpendicular to the original line, but passing through the point (2, -1).
- 15) Describe the new line with the slope-intercept form.
- 16) Describe the new line with the standard form of the equation of a line.



Problems 9 - 16

- 1) Draw a line with  $m = -4/5$  through the point  $(2, 0)$ .
- 2) Estimate the Y-intercept, then check by computing.
- 3) Describe the line using the slope-intercept form.
- 4) Describe the line using the standard equation of a line.
- 5) Find the slope of the line passing through the points  $(-2, -3)$  and  $(0, 4)$ , then draw to check.
- 6) Find the Y-intercept by computing first. Then confirm by checking your drawing from #5.
- 7) Describe the line using the slope-intercept form.
- 8) Describe the line using the standard equation of a line.



*Given the slope of the line and a point on the line, describe the following lines using the slope-intercept form.*

- 9)  $m = 1, (0, 3)$
- 10)  $m = -1/2, (-1, 1)$
- 11)  $m = -2/3, (-1, 2)$
- 12)  $m = 3/4, (2, 3)$
- 13)  $m = 2, (-2, -3)$
- 14)  $m = 4, (2, 0)$

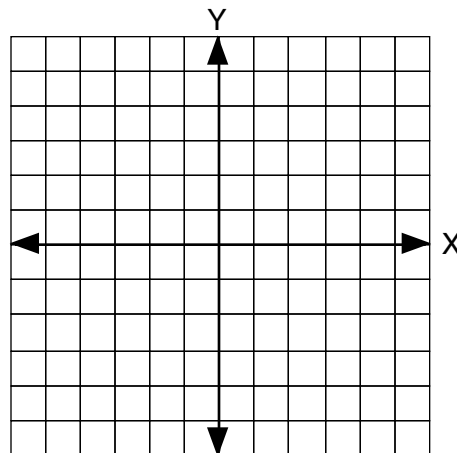
*Given two points on a line, find the slope and Y-intercept of the line and describe the line using the slope-intercept form.*

- 15)  $(2, 3) (-1, 2)$
- 16)  $(-2, -3) (2, 0)$

Follow the steps to graph each inequality.

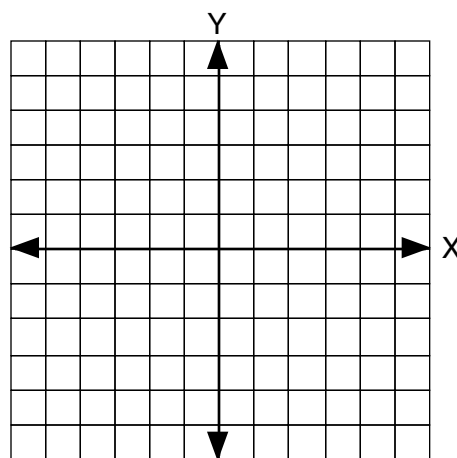
$$2X + Y < 4$$

- 1) Graph  $2X + Y = 4$ .
- 2) Will this be a solid line or a dotted line?
- 3) Choose 2 points, ( , ) ( , ), one on each side of the line.
- 4) Shade in the graph.



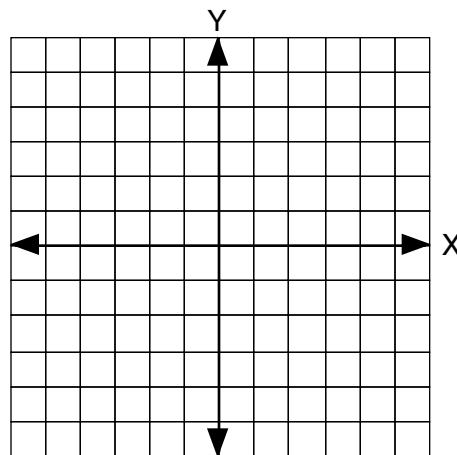
$$-Y \geq 3X + 1 \quad (\text{Hint: First multiply by } -1 \text{ to remove the negative } Y. \\ \text{The problem we are solving becomes } Y \leq -3X - 1.)$$

- 5) Graph  $Y = -3X - 1$
- 6) Will this be a solid line or a dotted line?
- 7) Choose 2 points, ( , ) ( , ), one on each side of the line.
- 8) Shade in the graph.



$$X - 2Y \leq 2$$

- 9) What is the appropriate line to graph for this inequality?  
Graph that line.
- 10) Will this be a solid line or a dotted line?
- 11) Choose 2 points, ( , ) ( , ), one on each side of the line.
- 12) Shade in the graph.

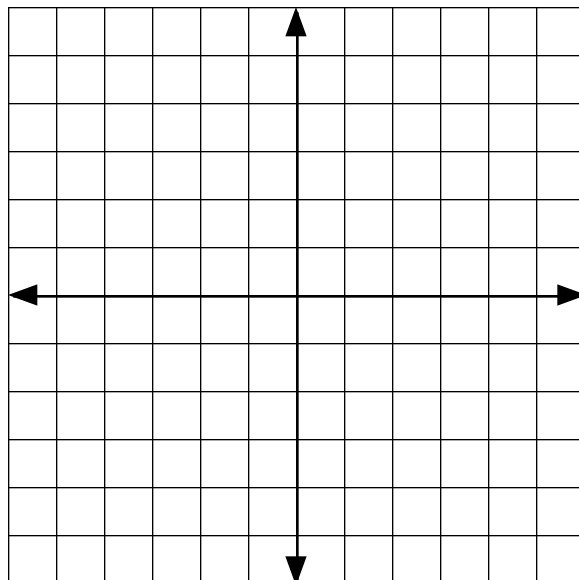


Write each inequality in slope-intercept form.

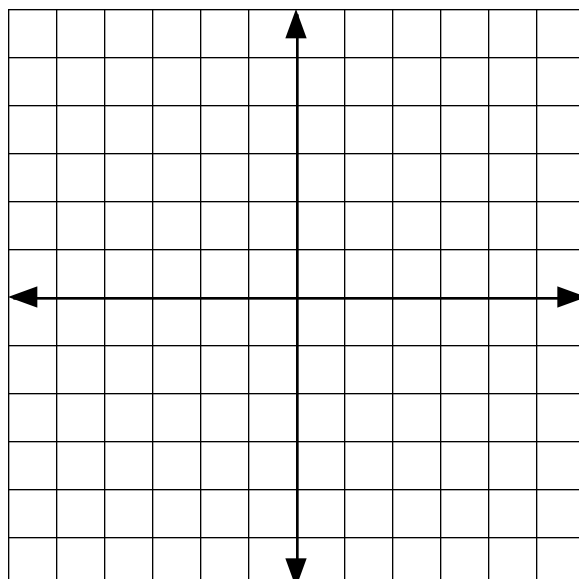
- 13)  $X - 4Y > 2$
- 14)  $-2X + 3Y \leq 5$
- 15)  $5X - 5Y < -15$

Follow the directions.

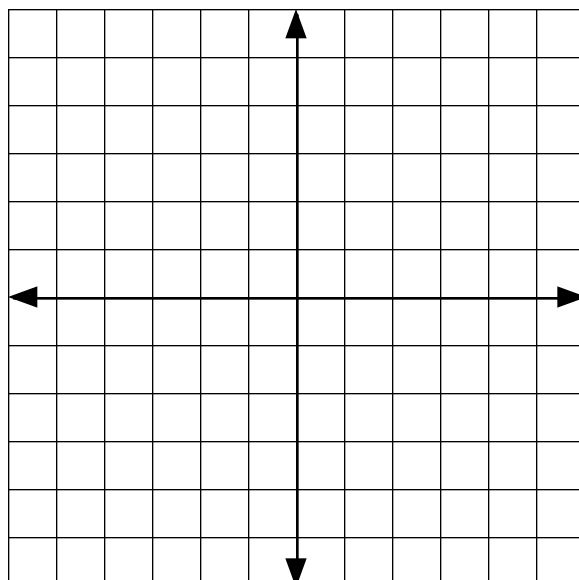
- 1) Draw line a:  $Y = X + 2$  and label it "a".
- 2) Draw line b:  $X + Y = -4$  and label it "b".
- 3) Record the point where line a and line b intersect.
- 4) Draw line c:  $2X - Y = 5$  and label it "c".
- 5) Draw line d:  $3Y = -9X$  and label it "d".
- 6) Record the point where line c and line d intersect.



- 7) Draw line e:  $-3X + Y = 6$  and label it "e".
- 8) Draw line f:  $X + 2Y = -2$  and label it "f".
- 9) Record the point where line e and line f intersect.
- 10) Draw line g:  $4X - Y = -3$  and label it "g".
- 11) Draw line h:  $X + Y = 3$  and label it "h".
- 12) Record the point where line g and line h intersect.



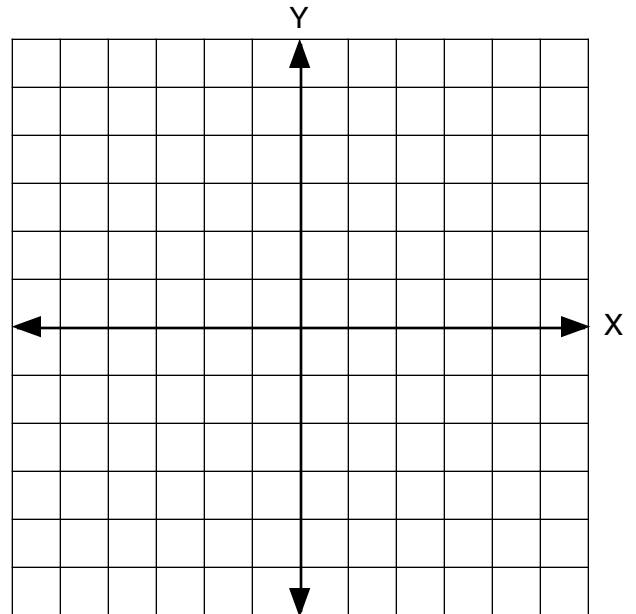
- 13) Draw line j:  $3X - 2Y = -6$  and label it "j".
- 14) Draw line k:  $X + Y = -2$  and label it "k".
- 15) Record the point where line j and line k intersect.
- 16) Draw line r:  $-2X + 3Y = 6$  and label it "r".
- 17) Draw line s:  $5X - 3Y = 3$  and label it "s".
- 18) Record the point where line r and line s intersect.



Follow the directions for each set of equations.

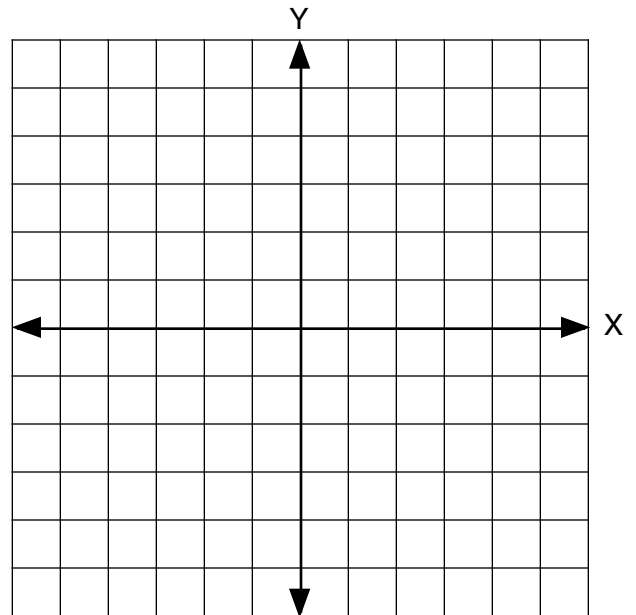
$$X + 2Y = 4 \quad 3X - Y = 5$$

- 1) Draw each line and estimate the solution.
- 2) Use the substitution method to find X.
- 3) Using the solution to #2, substitute to find Y.



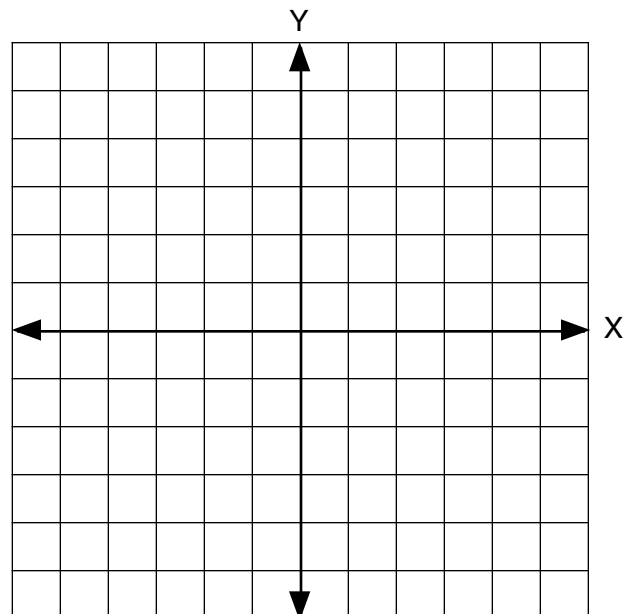
$$Y = 1/2X \quad X - 3Y = -3$$

- 4) Draw each line and estimate the solution.
- 5) Use the substitution method to find X.
- 6) Using the solution to #5, substitute to find Y.



$$X + Y = 2 \quad -2X + Y = 5$$

- 7) Draw each line and estimate the solution.
- 8) Use the substitution method to find Y.
- 9) Using the solution to #8, substitute to find X.



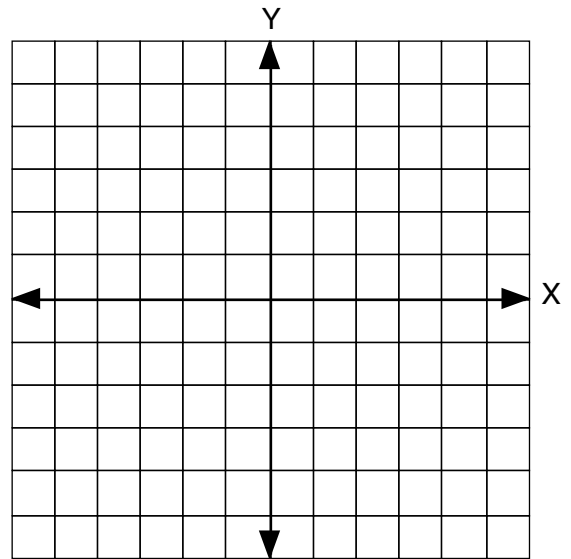
$$2X + 3Y = 9 \quad 5X - 3Y = 12$$

- 10) Use the substitution method to solve the equations.

Follow the directions for each set of equations.

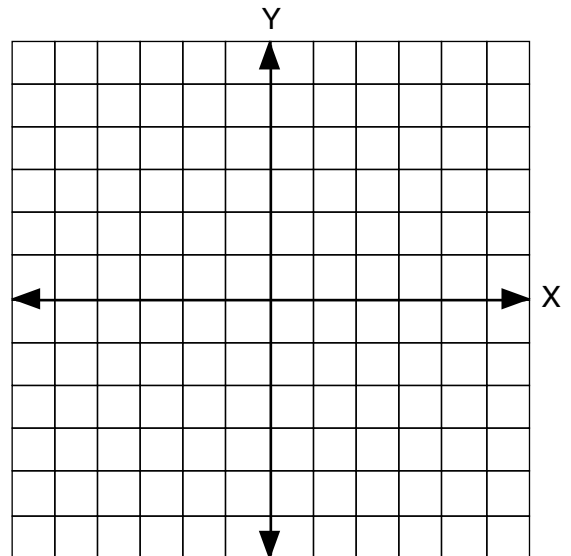
$$-X + Y = 1, \quad X + 2Y = -4$$

- 1) Draw each line and estimate the solution.
- 2) Use the elimination method to find Y.
- 3) Using the solution to #2, substitute to find X.



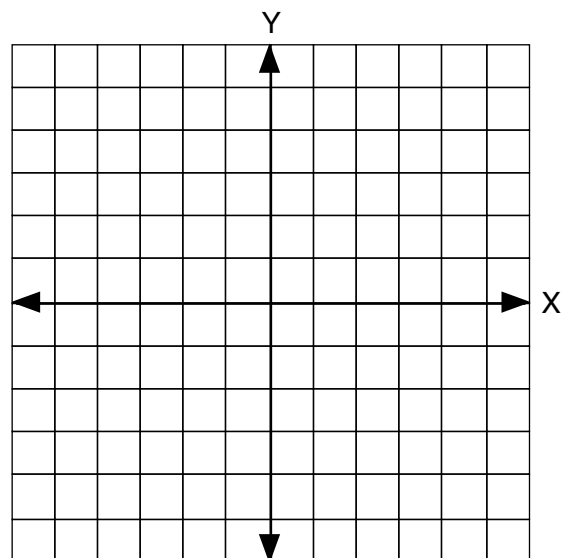
$$2X + 3Y = 6, \quad 4X + 3Y = 0$$

- 4) Draw each line and estimate the solution.
- 5) Use the elimination method to find X.
- 6) Using the solution to #5, substitute to find Y.



$$-5X + 2Y = 8, \quad 3X + 2Y = -8$$

- 7) Draw each line and estimate the solution.
- 8) Use the elimination method to find X.
- 9) Using the solution to #8, substitute to find Y.



$$4X - 2Y = 12, \quad 3X + 2Y = -5$$

- 10) Use the elimination method to solve the equations.

*Follow the directions to find the number of coins.*

There are 65 coins made up of pennies and nickels. The total value is \$1.05.

- 1) Write two equations, one for the number of coins and one for the value.
- 2) How many pennies are there?
- 3) How many nickels are there?

There are 17 coins made up of quarters and nickels. The total value is \$2.85.

- 4) Write two equations, one for the number of coins and one for the value.
- 5) How many quarters are there?
- 6) How many nickels are there?

There are 16 coins made up of nickels and dimes. The total value is \$1.05.

- 7) Write two equations, one for the number of coins and one for the value.
- 8) How many nickels are there?
- 9) How many dimes are there?

There are 30 coins made up of quarters and pennies. The total value is \$2.46.

- 10) Write two equations, one for the number of coins and one for the value.
- 11) How many quarters are there?
- 12) How many pennies are there?

*Follow the directions to find the unknown integers.*

Find three consecutive integers such that the sum of the first and the second is equal to nine more than the third.

- 1) Represent each integer with an unknown.
- 2) Write an equation using the unknowns.
- 3) Solve for the three integers.
- 4) Check by substituting the integers in your equation.

Find three consecutive integers such that the sum of the first plus twice the second plus three times the third is equal to four times the first.

- 5) Represent each integer with an unknown.
- 6) Write an equation using the unknowns.
- 7) Solve for the three integers.
- 8) Check by substituting the integers in your equation.

Find three consecutive odd integers such that six times the second is equal to twice the first.

- 9) Represent each integer with an unknown.
- 10) Write an equation using the unknowns.
- 11) Solve for the three integers.
- 12) Check by substituting the integers in your equation.

Find three consecutive even integers such that the sum of all three integers is equal to six less than four times the second integer.

- 13) Represent each integer with an unknown.
- 14) Write an equation using the unknowns.
- 15) Solve for the three integers.
- 16) Check by substituting the integers in your equation.

Simplify each expression.

1)  $14^2 =$

2)  $\sqrt{121} =$

3)  $(-7)^2 =$

4)  $(5)^3 =$

5)  $\sqrt{324} =$

6)  $3^3 =$

7)  $7^2 \cdot 7^4 =$

8)  $9^3 \cdot 9^7 =$

9)  $8^{10} \div 8^7 =$

10)  $6^4 \div 6^3 =$

11)  $A^2 A^5 A^4 =$

12)  $R^2 S^3 R^1 S^4 =$

13)  $2^R \cdot 2^S =$

14)  $B^{6X} \div B^{2X} =$

15)  $P^{12} \cdot P^3 \div P^5 =$

16)  $A^2 B^2 C^2 B^3 C^2 =$

Write on one line.

$$1) \frac{1}{3^2} =$$

$$2) \frac{1}{2^3} =$$

Rewrite using positive exponents.

$$3) A^{-2} =$$

$$4) 3^{-1} =$$

Simplify each expression.

$$5) 5^2 5^{-6} =$$

$$6) 4^{-2} 4^{-5} =$$

$$7) (2^{-4})^5 =$$

$$8) (R^{-3})^{-6} =$$

$$9) (7^{-2})^2 =$$

$$10) A^2 B^2 A^{-2} B =$$

$$11) R^{-3} S^{-2} S R =$$

$$12) A^2 B C^{-2} B^2 C =$$

$$13) B^{-8} \cdot B^2 \div B^{-6} =$$

$$14) R^{12X} \div R^{4X} =$$

$$15) \frac{B^4 C^2 B^3 C^2}{BC^2 C^3} =$$

$$16) \frac{Q^2 R^4 Q^2}{R^3 Q^1 R^2 Q} =$$

*Build.*

1)  $X^2 + 9$

2)  $X^2 + 5X - 3$

3)  $2X^2 - 8$

*Build and add.*

4) 
$$\begin{array}{r} X^2 - 2X + 5 \\ + X^2 + 3X - 2 \\ \hline \end{array}$$

5) 
$$\begin{array}{r} 3X^2 - X \\ + 2X^2 + 6X + 3 \\ \hline \end{array}$$

6) 
$$\begin{array}{r} 4X^2 - 2X - 3 \\ + 2X^2 + 2X + 3 \\ \hline \end{array}$$

*Build a rectangle and find the area (product)*

7)  $(X + 1)(X + 3) =$

8)  $(X + 2)(X + 4) =$

9)  $(X + 2)(X + 5) =$

*Multiply.*

10) 
$$\begin{array}{r} 3X + 1 \\ \times X + 5 \\ \hline \end{array}$$

11) 
$$\begin{array}{r} 2X + 2 \\ \times 3X + 1 \\ \hline \end{array}$$

12) 
$$\begin{array}{r} 4X + 1 \\ \times X + 2 \\ \hline \end{array}$$

13) 
$$\begin{array}{r} X - 2 \\ \times 2X + 3 \\ \hline \end{array}$$

14) 
$$\begin{array}{r} 5X - 1 \\ \times X - 2 \\ \hline \end{array}$$

15) 
$$\begin{array}{r} 6X + 2 \\ \times X - 2 \\ \hline \end{array}$$

16) 
$$\begin{array}{r} X - 1 \\ \times X - 2 \\ \hline \end{array}$$

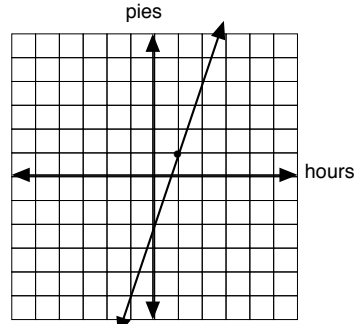
17) 
$$\begin{array}{r} 3X - 2 \\ \times 4X - 2 \\ \hline \end{array}$$

18) 
$$\begin{array}{r} X - 4 \\ \times 3X + 3 \\ \hline \end{array}$$

Practice 6C

1) 

hours	pies
0	-2
1	1
2	4

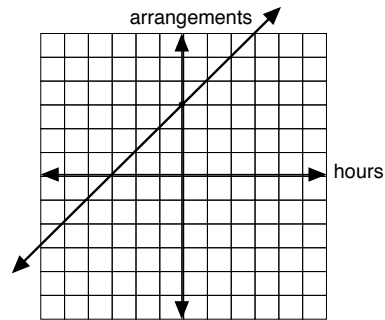


2) on the graph

3)  $P = 3H - 2$

4) 

hours	arr.
0	3
1	4
2	5

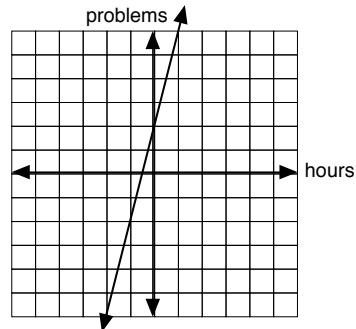


5) on the graph

6)  $A = H + 3$

7) 

hours	problems
0	2
1	6
2	10

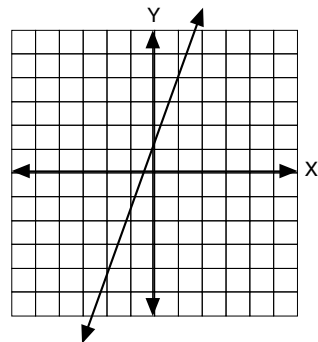


8) on the graph

9)  $P = 4H + 2$

10) 

X	Y
0	1
1	4
2	7



11) on the graph

12) Answers will vary. Your problem should start with a positive amount.

Practice 7C

1) done

2) done

3) slope-intercept

4) 0

5) 4

6) 2

7) answers will vary:  
ex:  $Y = 3X$

8) C

9) E

10) D

11) B

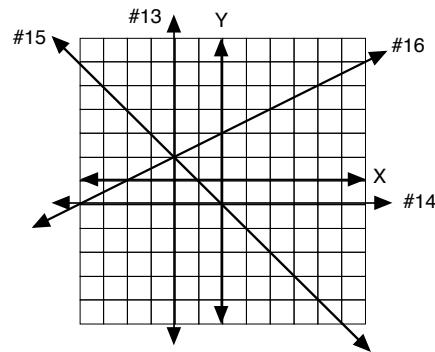
12) A

13) on the graph

14) on the graph

15) on the graph

16) on the graph



Practice 8C

1) on the graph

2) slope =  $-\frac{2}{1} = -2$

3) y-intercept = -1

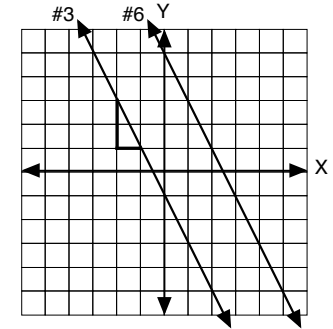
4)  $Y = -2X - 1$

5) A and B

6) on the graph

7)  $Y = -2X + 5$

8)  $2X + Y = 5$



9) on the graph

10) slope =  $\frac{1}{2}$

11) y-intercept = 0

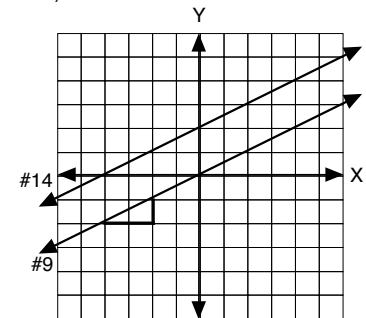
12)  $Y = \frac{1}{2}X$

13) B and C

14) on the graph

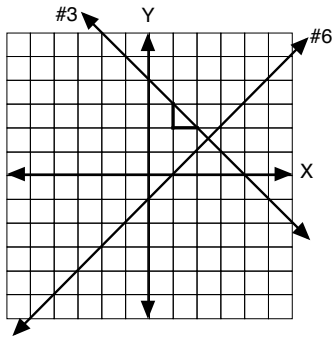
15)  $Y = \frac{1}{2}X + 2$

16)  $X - 2Y = -4$

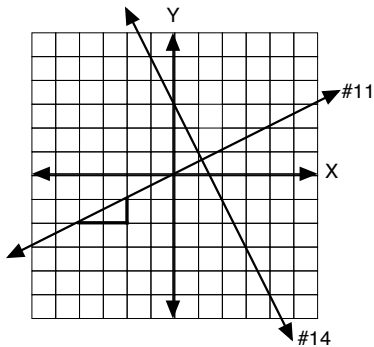


Lesson 9C

- 1) on the graph
- 2) slope =  $-\frac{1}{1} = -1$
- 3) y-intercept = 4
- 4)  $Y = -X + 4$
- 5) B and C
- 6) on the graph
- 7)  $Y = X - 1$
- 8)  $X - Y = 1$

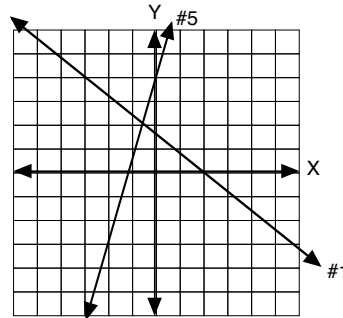


- 9) on the graph
- 10) slope =  $\frac{1}{2}$
- 11) Y-intercept = 0
- 12)  $Y = \frac{1}{2}X$
- 13) C
- 14) on the graph
- 15)  $Y = -2X + 3$
- 16)  $2X + Y = 3$



Practice 10C

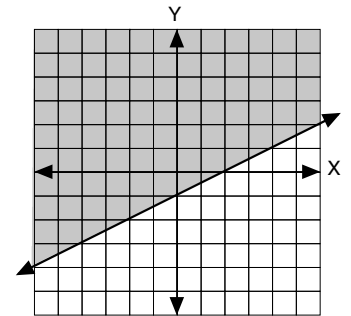
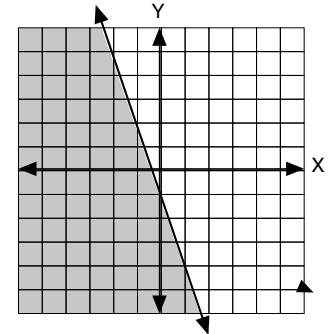
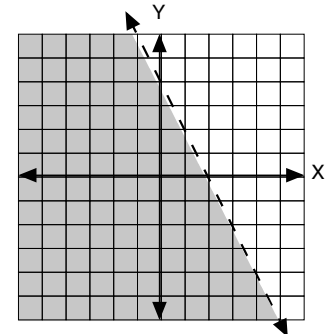
- 1) on the graph
- 2)  $0 = -4/5(2) + b$   
y-intercept =  $1 \frac{3}{5}$
- 3)  $Y = -4/5 X + 1 \frac{3}{5}$
- 4)  $4X + 5Y = 8$



- 5)  $\frac{4}{0} = \frac{(3)}{(2)} = \frac{7}{2}$  (see graph)
- 6)  $4 = 7/2(0) + b$   
 $4 = 0 + b;$   $4 = b$
- 7)  $Y = 7/2 X + 4$
- 8)  $-7/2 X + Y = 4;$   $-7X + 2Y = 8;$   $7X - 2Y = -8$
- 9)  $(3) = 1(0) + b$   
 $3 = b$   
 $Y = X + 3$
- 10)  $(1) = -1/2(-1) + b$   
 $1 = 1/2 + b;$   $b = 1/2$   
 $Y = -1/2X + 1/2$
- 11)  $(2) = -2/3(-1) + b$   
 $2 = 2/3 + b;$   $b = 1 \frac{1}{3}$   
 $Y = -2/3X + 1 \frac{1}{3}$
- 12)  $(3) = 3/4(2) + b$   
 $3 = 3/2 + b;$   $b = 1 \frac{1}{2}$   
 $Y = 3/4X + 1 \frac{1}{2}$
- 13)  $(-3) = 2(-2) + b$   
 $-3 = -4 + b;$   $1 = b$   
 $Y = 2X + 1$
- 14)  $(0) = 4(2) + b$   
 $0 = 8 + b;$   $-8 = b$   
 $Y = 4X - 8$
- 15)  $\frac{2}{1} = \frac{3}{2} = \frac{1}{3} = \frac{1}{3} = m$   
 $(3) = 1/3(2) + b$   
 $3 = 2/3 + b;$   $2 \frac{1}{3} = b$   
 $Y = 1/3 X + 2 \frac{1}{3}$
- 16)  $\frac{0}{2} = \frac{(3)}{(2)} = \frac{3}{4} = m$   
 $(0) = 3/4(2) + b$   
 $3 = 3/2 + b;$   $-1 \frac{1}{2} = b$   
 $Y = 3/4 X - 1 \frac{1}{2}$

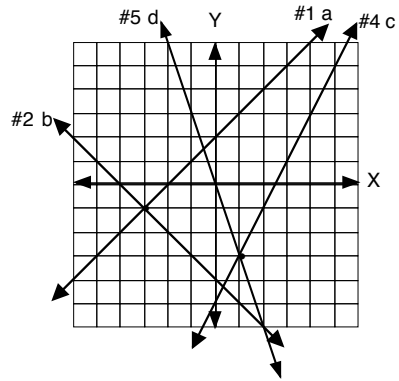
Practice 11C

- 1)  $Y = -2X + 4$  see graph
- 2) dotted
- 3)  $(0, 0)$   $2(0) + (0) < 4,$   $0 < 4$  true  
 $(2, 2)$   $2(2) + (2) < 4,$   $6 < 4$  false
- 4) see graph
- 5) see graph
- 6) solid
- 7)  $(0, 0)$   $(0) \leq -3(0) - 1;$   $0 \leq -1$  false  
 $(-1, 0)$   $(0) \leq -3(-1) - 1;$   $0 \leq 2$  true
- 8) see graph
- 9)  $X - 2Y = 2;$   $Y = 1/2 X - 1;$  see graph
- 10) solid
- 11)  $(0, 0)$   $(0) - 2(0) \leq 2;$   $0 \leq 2$  true  
 $(3, 0)$   $(3) - 2(0) \leq 2,$   $3 \leq 2$  false
- 12) see graph
- 13)  $-4Y > -X + 2$   
 $Y < 1/4 X - 1/2$
- 14)  $3Y \leq 2X = 5$   
 $Y \leq 2/3 X + 1 \frac{2}{3}$
- 15)  $-5Y < -5X - 15$   
 $Y > X + 3$

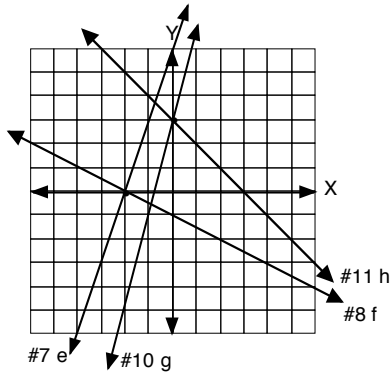


Practice 12C

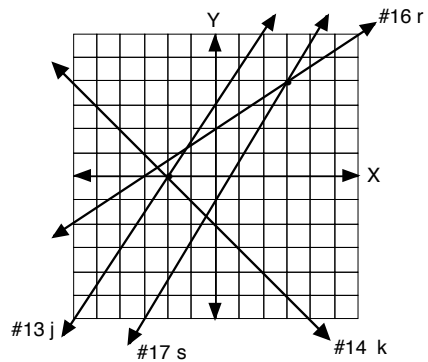
- 1) on the graph
- 2) on the graph
- 3) (-3, -1)
- 4) on the graph
- 5) on the graph
- 6) (1, -3)



- 7) on the graph
- 8) on the graph
- 9) (-2, 0)
- 10) on the graph
- 11) on the graph
- 12) (0, 3)

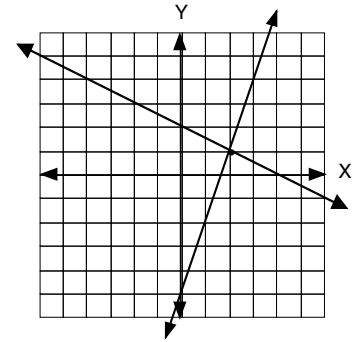


- 13) on the graph
- 14) on the graph
- 15) (-2, 0)
- 16) on the graph
- 17) on the graph
- 18) (3, 4)

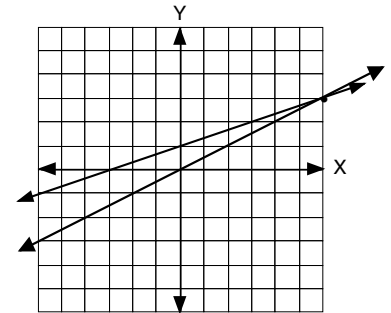


Practice 13C

- 1) (2, 1)
- 2)  $X + 2(3X - 5) = 4$   
 $X + 6X - 10 = 4$   
 $7X = 14, X = 2$
- 3)  $(2) + 2Y = 4$   
 $2Y = 2, Y = 1$

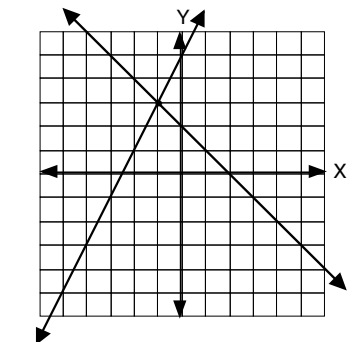


- 4) (6, 3)
- 5)  $X - 3(1/2 X) = -3$   
 $X - 1 1/2 X = -3$   
 $-1/2 X = -3, X = 6$



- 6)  $Y = 1/2(6)$   
 $Y = 3$
- 7) (-1, 3)

- 8)  $-2(-Y + 2) + Y = 5$   
 $2Y - 4 + Y = 5$   
 $3Y = 9, Y = 3$



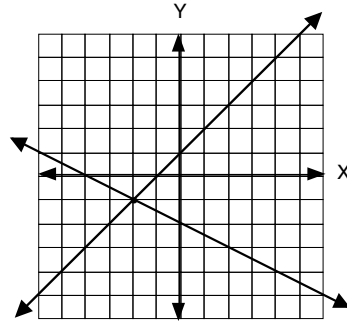
- 9)  $X + 3 = 2$   
 $X = -1$
- 10)  $5X - 3(-2/3 X + 3) = 12$   
 $5X + 2X - 9 = 12$   
 $7X = 21, X = 3$   
 $2(3) + 3Y = 9$   
 $6 + 3Y = 9$   
 $3Y = 3, Y = 1$   
 $(3, 1)$

Practice 14C

1)  $(-2, -1)$

$$\begin{array}{r} -X + Y = 1 \\ + (X + 2Y = -4) \\ \hline 3Y = -3 \\ Y = -1 \end{array}$$

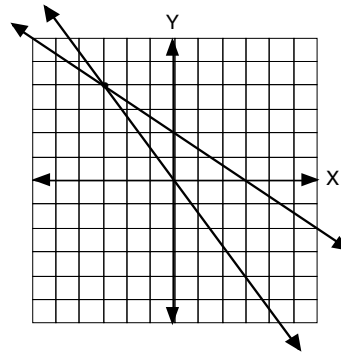
$$\begin{array}{r} -X + (-1) = 1 \\ -X = 2 \\ X = -2 \end{array}$$



4)  $(-3, 4)$

$$\begin{array}{r} 2X + 3Y = 6 \\ -(4X + 3Y = 0) \\ \hline -2X = 6 \\ X = -3 \end{array}$$

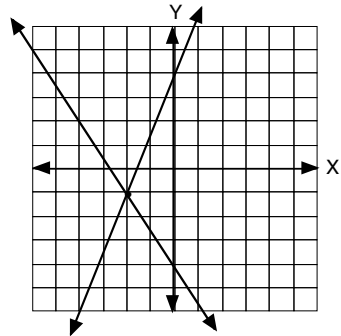
$$\begin{array}{r} 2(-3) + 3Y = 6 \\ -6 + 3Y = 6 \\ 3Y = 12 \\ Y = 4 \end{array}$$



7)  $(-2, -1)$

$$\begin{array}{r} -5X + 2Y = 8 \\ - (3X + 2Y = -8) \\ \hline -8X = 16 \\ X = -2 \end{array}$$

$$\begin{array}{r} 3(-2) + 2Y = -8 \\ -6 + 2Y = -8 \\ 2Y = -2 \\ Y = -1 \end{array}$$



$$\begin{array}{r} 4X - 2Y = 12 \\ + (3X + 2Y = -5) \\ \hline 7X = 7 \\ X = 1 \end{array} \quad \begin{array}{r} 4(1) - 2Y = 12 \\ 4 - 2Y = 12 \\ -2Y = 8 \\ Y = -4 \end{array} \quad (1, -4)$$

Practice 15C

1)  $P + N = 65$   
 $.01P + .05N = 1.05$

$$\begin{array}{r} (P + N = 65)(-5) = -5P - 5N = -325 \\ (.01P + .05N = 1.05)(100) = P + 5N = 105 \\ \hline -4P = -220 \\ P = 55 \end{array}$$

3) If  $P = 55$  and  $P + N = 65$ , then nickels = 10.

4)  $Q + N = 17$   
 $.25Q + .05N = \$2.85$

$$\begin{array}{r} (Q + N = 17)(-5) = -5Q - 5N = -85 \\ (.25Q + .05N = 2.85)(100) = 25Q + 5N = 285 \\ \hline 20Q = 200 \\ Q = 10 \end{array}$$

6) If  $Q = 10$  and  $Q + N = 17$ , then nickels = 7

7)  $N + D = 16$   
 $.05N + .10D = 1.05$

$$\begin{array}{r} (N + D = 16)(-10) = -10N - 10D = -160 \\ (.05N + .10D = 1.05)(100) = 5N + 10D = 105 \\ \hline -5N = -55 \\ N = 11 \end{array}$$

9) If  $N = 11$  and  $N + D = 16$ , then  $D = 5$ .

10)  $Q + P = 30$   
 $.25Q + .01P = 2.46$

$$\begin{array}{r} (Q + P = 30)(-1) = -Q - P = -30 \\ (.25Q + .01P = 2.46)(100) = 25Q + P = 246 \\ \hline 24Q = 216 \\ Q = 9 \end{array}$$

12) If  $Q = 9$  and  $Q + P = 30$ , then  $P = 21$

Practice 16C

1)  $N, N + 1, N + 2$

2)  $N + (N + 1) = (N + 2) + 9$

3)  $2N + 1 = N + 11$   
 $N = 10$   
 10, 11, 12

4)  $10 + (11) = (12) + 9$   
 $21 = 21 \checkmark$

5)  $N, N + 1, N + 2$

6)  $N + 2(N + 1) + 3(N + 2) = 4(N)$

7)  $N + 2N + 2 + 3N + 6 = 4N$   
 $6N + 8 = 4N$   
 $2N = -8 \quad N = -4$   
 -4, -3, -2

8)  $(-4) + 2(-3) + 3(-2) = 4(-4)$   
 $-4 - 6 - 6 = -16$   
 $-16 = -16 \checkmark$

9)  $N, N + 2, N + 4$

10)  $6(N + 2) = 2(N)$

11)  $6N + 12 = 2N$   
 $4N = -12 \quad N = -3$   
 -3, -1, 1

12)  $6(-1) = 2(-3)$   
 $-6 = -6 \checkmark$

13)  $N, N + 2, N + 4$

14)  $N + (N + 2) + (N + 4) = 4(N + 2) - 6$

15)  $3N + 6 = 4N + 8 - 6$   
 $3N + 6 = 4N + 2$   
 $4 = N$   
 4, 6, 8

16)  $4 + (6) + (8) = 4(6) - 6$   
 $18 = 18 \checkmark$


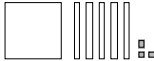


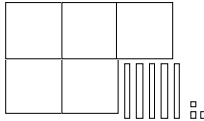
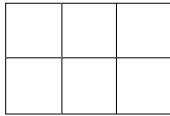
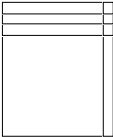
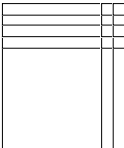
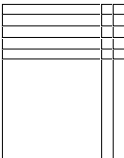
Practice 17C

- 1) 196
- 2)  $\pm 11$
- 3) 49
- 4) 125
- 5)  $\pm 18$
- 6) 27
- 7)  $7^2 \cdot 7^4 = 7^{2+4} = 7^6$
- 8)  $9^{3+7} = 9^{10}$
- 9)  $8^{10-7} = 8^3$
- 10)  $6^{4-3} = 6^1 = 6$
- 11)  $A^{2+5+4} = A^{11}$
- 12)  $R^{2+1} S^{3+4} = R^3 S^7$
- 13)  $2R+S$
- 14)  $B^{6X-2X} = B^{4X}$
- 15)  $P^{12+3-5} = P^{10}$
- 16)  $A^2 B^{2+3} C^{2+2} = A^2 B^5 C^4$

Practice 18C

- 1)  $3^2$
- 2)  $2^{-3}$
- 3)  $\frac{1}{A^2}$
- 4)  $\frac{1}{3}$
- 5)  $5^{2-6} = 5^{-4}$
- 6)  $4^{-2-5} = 4^{-7}$
- 7)  $2^{-4(5)} = 2^{-20}$
- 8)  $(R^{-3})^{-6} = R^{18}$
- 9)  $7^{-2(2)} = 7^{-4}$
- 10)  $A^{2-2} B^{2+1} = A^0 B^3 = B^3$
- 11)  $R^{-3+1} S^{-2+1} = R^{-2} S^{-1}$
- 12)  $A^2 B^{1+2} C^{-2+1} = A^2 B^3 C^{-1}$
- 13)  $B^{-8+2-(-6)} = B^0 = 1$
- 14)  $R^{12X-4X} = R^{8X}$
- 15)  $\frac{B^{4-3} C^{2+2}}{B^1 C^{2-3}} = \frac{B^1 C^4}{B^1 C^{-1}} = B^{1-1} C^{4-(-1)} = C^5$
- 16)  $\frac{Q^{2-2} R^4}{R^{3-2} Q^{-1+1}} = \frac{Q^0 R^4}{R^1 Q^0} = \frac{R^4}{R^1} = R^{4-1} = R^3$

Practice 19C

- 1)  $X^2 + 9$  
- 2)  $X^2 + 5X - 3$  
- 3)  $2X^2 - 8$  
- 4)  $\frac{X^2 - 2X + 5}{2X^2 + X + 3}$  
- 5)  $\frac{3X^2 - X}{5X^2 + 5X + 3}$  
- 6)  $\frac{4X^2 - 2X - 3}{6X^2}$  
- 7)  $(X + 1)(X + 3) = X^2 + 4X + 3$  
- 8)  $(X + 2)(X + 4) = X^2 + 6X + 8$  
- 9)  $(X + 2)(X + 5) = X^2 + 7X + 10$  

- 10) 
$$\begin{array}{r} 3X + 1 \\ \times \quad X + 5 \\ \hline 15X + 5 \\ 3X^2 + X \\ \hline 3X^2 + 16X + 5 \end{array}$$
- 11) 
$$\begin{array}{r} 2X + 2 \\ \times \quad 3X + 1 \\ \hline 6X^2 + 6X \\ 2X^2 + 2X \\ \hline 8X^2 + 8X + 2 \end{array}$$
- 12) 
$$\begin{array}{r} 4X + 1 \\ \times \quad X + 2 \\ \hline 8X + 2 \\ 4X^2 + X \\ \hline 4X^2 + 9X + 2 \end{array}$$
- 13) 
$$\begin{array}{r} X - 2 \\ \times \quad 2X + 3 \\ \hline 3X - 6 \\ 2X^2 - 4X \\ \hline 2X^2 - X - 6 \end{array}$$
- 14) 
$$\begin{array}{r} 5X - 1 \\ \times \quad X - 2 \\ \hline -10X + 2 \\ 5X^2 - X \\ \hline 5X^2 - 11X + 2 \end{array}$$
- 15) 
$$\begin{array}{r} 6X + 2 \\ \times \quad X - 2 \\ \hline -12X - 4 \\ 6X^2 + 2X \\ \hline 6X^2 - 10X - 4 \end{array}$$
- 16) 
$$\begin{array}{r} X - 1 \\ \times \quad X - 2 \\ \hline -2X + 2 \\ X^2 - X \\ \hline X^2 - 3X + 2 \end{array}$$
- 17) 
$$\begin{array}{r} 3X - 2 \\ \times \quad 4X - 2 \\ \hline -6X + 4 \\ 12X^2 - 8X \\ \hline 12X^2 - 14X + 4 \end{array}$$
- 18) 
$$\begin{array}{r} X - 4 \\ \times \quad 3X + 3 \\ \hline 3X - 12 \\ 3X^2 - 12X \\ \hline 3X^2 - 9X - 12 \end{array}$$