*Add or subtract.*

1) (-3) + (-6) =

2) (2) + (-5) =

3) (-7) + (-1) =

4) (-3) - (-6) =

5) (+2) - (+5) =

6) (-7) - (-4) =

*Multiply.*

7) (5)(-4) =

8) (-3)(-6) =

9) (-1)(2) =

*Division is the inverse of multiplication. Use what you know about multiplication to answer the questions.*

10) A negative times a positive is negative. (-2)(3) = (-6)
Dividing the negative answer by the positive factor gives a _____ answer.

11) A negative times a positive is negative. (-2)(3) = (-6)
Dividing the negative answer by the negative factor gives a _____ answer.

12) A negative times a negative is positive. (-2)(-3) = (+6)
Dividing the positive answer by either negative factor gives a _____ answer.

*Divide.*

13) (-16) ÷ (-4) =

14) (-20) ÷ (5) =

15) (32) ÷ (-8) =

*Simplify.*

16) $(-8)^2$ =

17) $-8^2$ =

18) $-(8)^2$ =

*Simplify by combining like terms.*

19) 6X - 7Y - 4Y + 11X - 8 =

20) 9X + 2Y + 3X - Y =

21) 12B + 8A - 9A - 10B =

22) 4C - 3D + 7C - 4 + 3 =

*True or False.*

23) Division is commutative.

24) Multiplication is associative.

25) Addition is associative.

*Find the least common multiple (LCM) using whichever method you prefer.*

1) 24 and 48

2) 10 and 15

3) 9 and 11

4) 35 and 56

5) 36 and 25

6) 54 and 32

*Use PARAchute EXpert My Dear Aunt Sally to simplify each expression.*

7) $-3^2 \cdot 2 + 2^2 =$

8) $10 \cdot 3^2 + 18 =$

9) $(-5)^2 \cdot 9 \div 3 =$

10) $14(2 + 1^2) - 4 =$

11) $9 + 33 \div 3 - 7^2 =$

12) $4X - 4Y + 6X + 5Y - 1 =$

13) $|4 \cdot 6^2| =$

14) $|5 - 2^3| =$

15) $|-3^2 - 7^2| =$

16) $|9^2 - 3^2| =$

17) $- 5^2 + |1^2 - 5^2| + (2 \times 3^2) =$

18) $6 + 3 \div 3 - 8 + 4 \times 5 =$

*Simplify, then solve and check.*

1) $-4A + 3 + 7A - 2 = 8 + 2$

2) $2C - C + 8 + 3C = 16$

3) $-5Y + 7 + 8Y + 4 + Y = 15$

4) $B + 2B - 8 + 5B = (3 \times 4) + 4$

5) $4K + 2 + 2K + K - 2 = 7^2$

6) $7Q - 4Q + 10 - 9 + Q = 22 - 1$

7) $6 + 5A = 3A + 18$

8) $10R + 2R - 9 = 10 - 7$

9) $C + C - 4 + 8C = 2C + 2 \cdot 6$

10) $12 \div 4 + 6X = 25 + 26$

11) $-2Y - 2 - 5Y + 9Y + 4 = 3 \cdot 4$

12) $-8 + 2E + 5 - E + 5E = 3^2 + 6$

13) $2R - 8R + 3 + 7R = 10$

14) $8 - 6 + 7Z + 5Z = (100 \cdot 2) \div 4$

*Rewrite each expression using the distributive property. Simplify if possible.*

1) $6(3 + 2) =$

2) $7(3 + 4 + 1) =$

3) $5(X + Y) =$

4) $2(4M + 2Q) =$

5) $3(A + 3B - 2 + 4A) =$

6) $4(X + 2Y + 4 + X) =$

*Rewrite each expression using the distributive property in reverse. (Find the greatest common factor.) The first one is done for you.*

7) $2X + 2Y = 2(X + Y)$

8) $4A - 8B =$

9) $21X + 14Y =$

10) $-5M - 10N =$

11) $5B + 15C =$

12) $-5X + 20A =$

*Simplify each equation using the greatest common factor, then solve for the unknown. The first one is done for you.*

13) $4A + 12 = 48$

$4(A + 3) = 4(12)$

$A + 3 = 12$ dividing each side by 4

$A = 9$

14) $8B + 16 = 56$

15) $12X - 36 + 36X = 60$

16) $6Y - 12 - 3Y = 18$

17) $5A + 20 = 30$

18) $2Q - 14 = 24$

*Follow the directions for each graph*

1) Write the coordinates of point A.

2) What quadrant is this?

3) Write the coordinates of point B.

4) What quadrant is this?

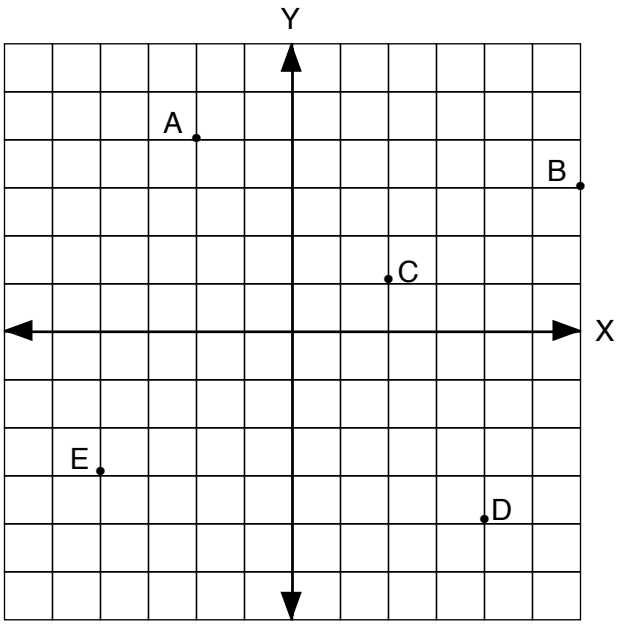
5) Write the coordinates of point C.

6) What quadrant is this?

7) Write the coordinates of point D.

8) What quadrant is this?

9) Write the coordinates of point E.




10) What quadrant is this?

11) Graph and label point F. (-5, 3)

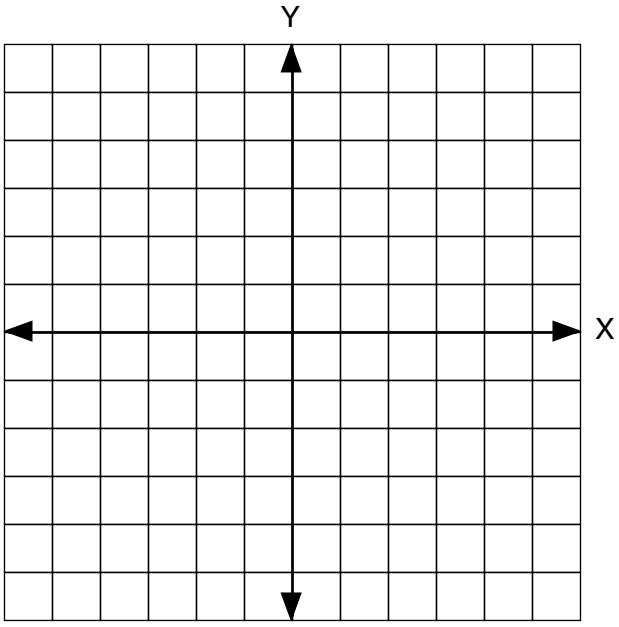
12) What quadrant is this?

13) Graph and label point H. (2, 3)

14) What quadrant is this?

15) Graph and label point J. (3, -5)

16) What quadrant is this?




17) What are the coordinates of the origin?

18) In the 2nd quadrant X is _____ and Y is _____.

19) Graph (4, 1), (4, -1) and (4, 4). What do these have in common?

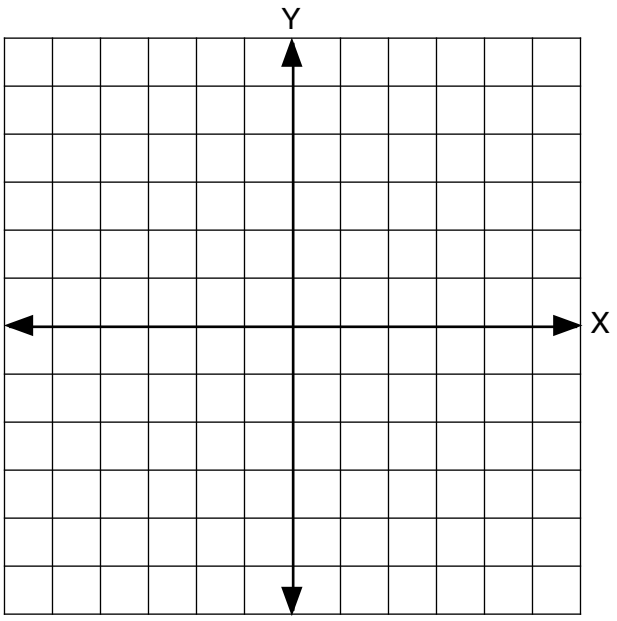
20) If you draw a line through these points it has an X coordinate of _____.

1) Pam's Pie Pantry had two back-orders for cherry pies. Pam can bake three 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.




Questions 2 and 5

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

| Hours | Arr. |
|---|---|
| 0 | 3 |
| ___ | ___ |
| ___ | ___ |

5) Plot these points and connect them.

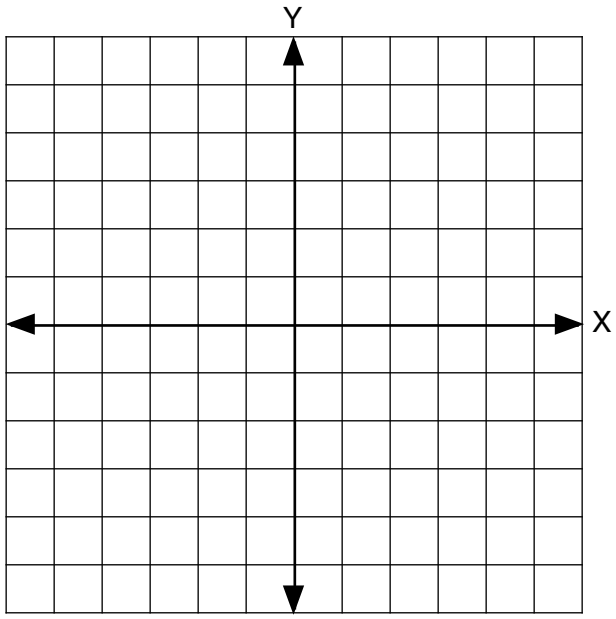
6) Write an equation for the line.

7) Tommy had completed two math word problems when his mother came home. Tommy can complete four 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.




Questions 8 and 11

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.

**If your book has 35 lessons, use this practice page after doing lessons 7 and 8.**

*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.*

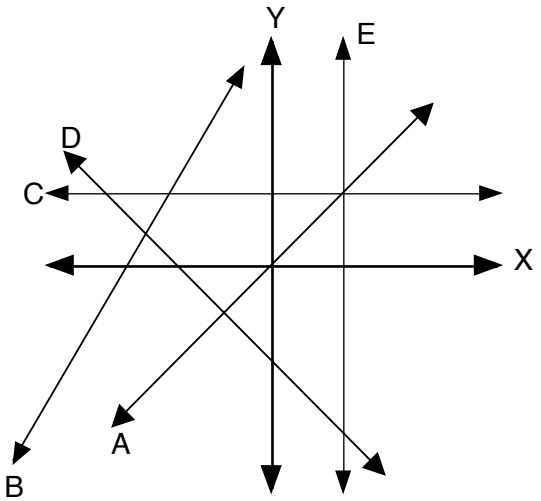
8) Y = 3

9) X = 3

10) Y = -X - 4

11) Y = 2X + 6

12) Y = X



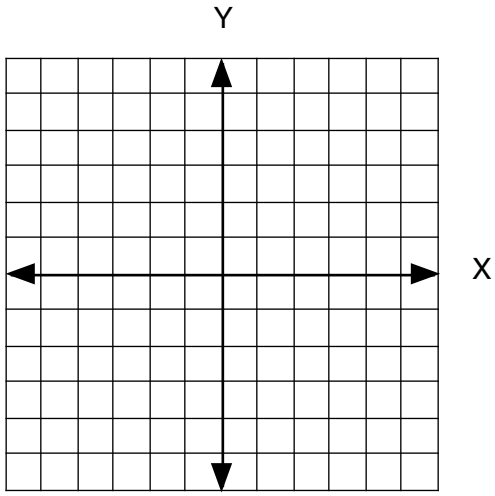

*Draw a line for each of the equations.*

13) X = -2

14) Y = -1

15) Y = -X - 1

16) Y = 1/2X + 2



**This and subsequent pages are numbered to correspond to the 35 lesson verson of Algebra 1. Subtract one from each lesson number if your version has 34 lessons.**

1) Plot the points (-1, 1) and (-2, 3).

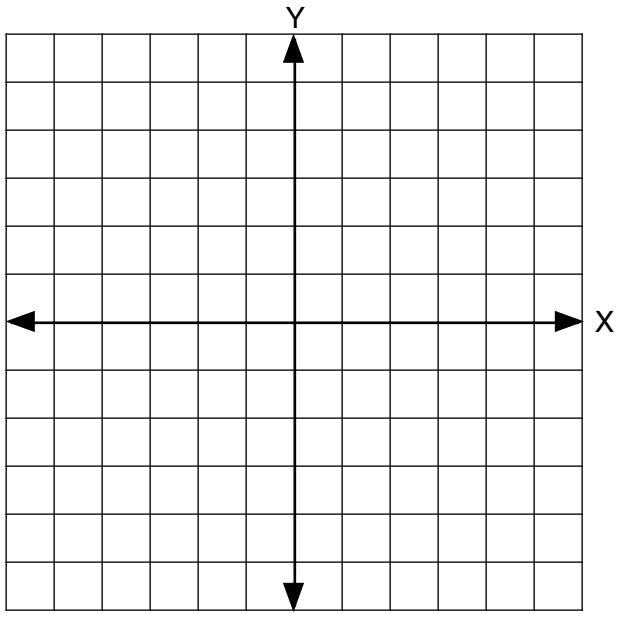
2) Make a right triangle and determine the slope.

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).

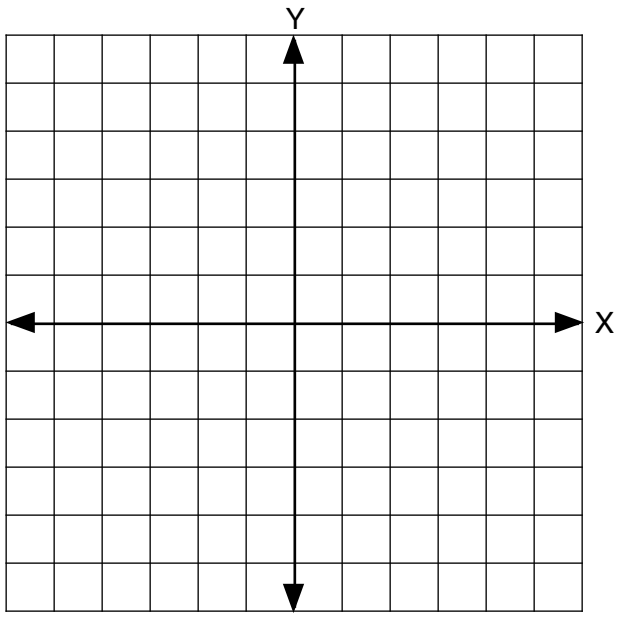
10) Make a right triangle and determine the slope.

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.

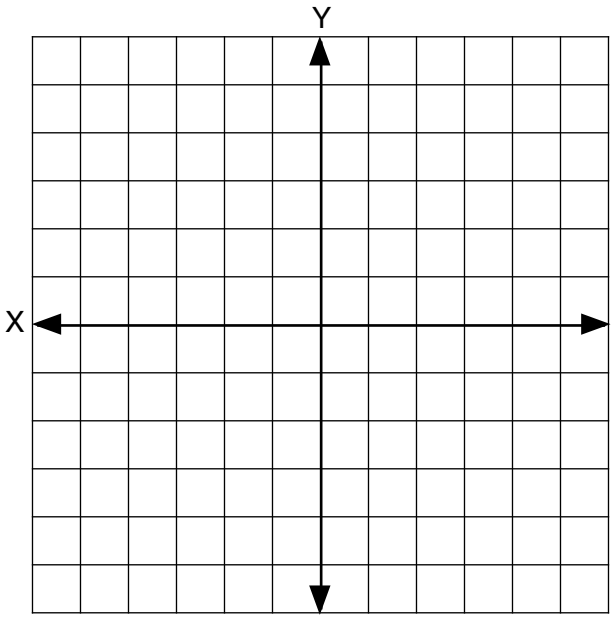
5) Which of the following lines is perpendicular to the line you drew? (There may be more than one answer).

   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.

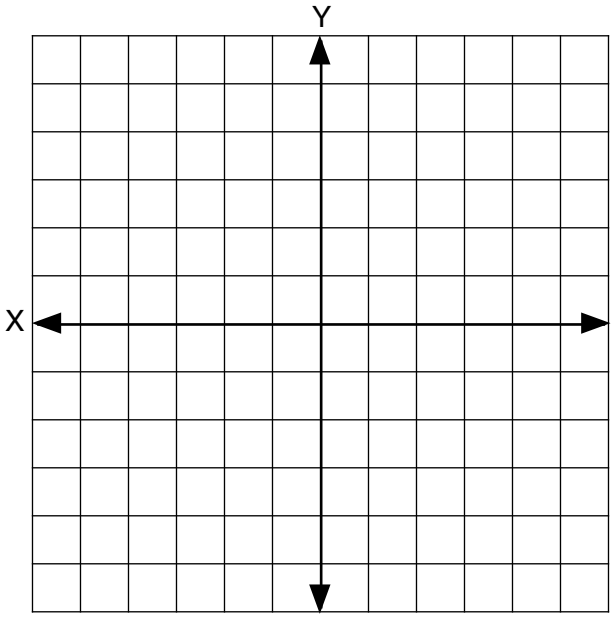
13) Which of the following lines is perpendicular to the line you drew? (There may be more than one answer).

   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).

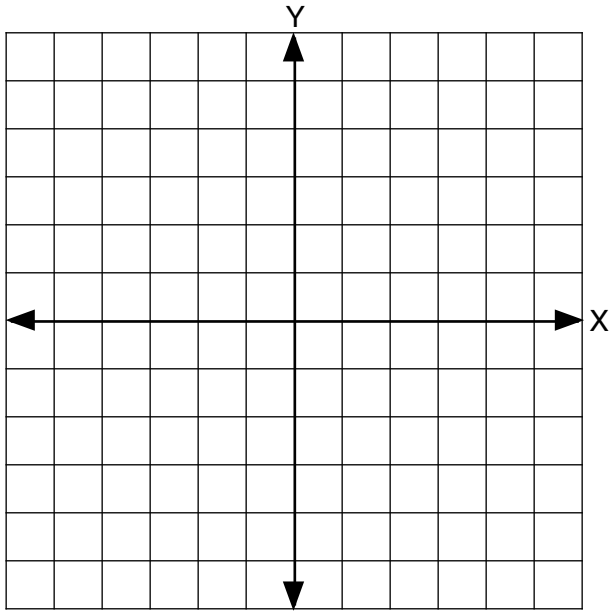
15) Describe the new line with the slope-intercept form.

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)

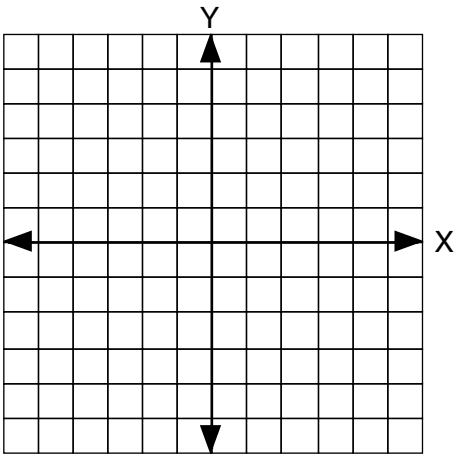
14) m = 4, (2, 0)

*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.*



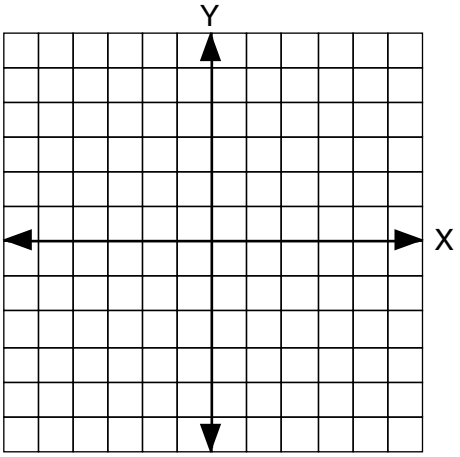

$2X + Y < 4$

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.



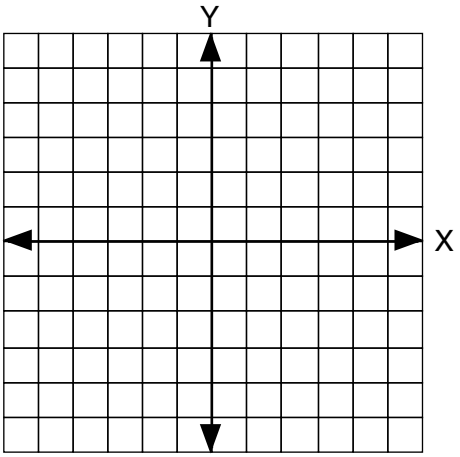

$-Y \geq 3X + 1$ (Hint: First multiply by -1 to remove the negative Y. The problem we are solving becomes $Y \leq -3X - 1$.)

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”.

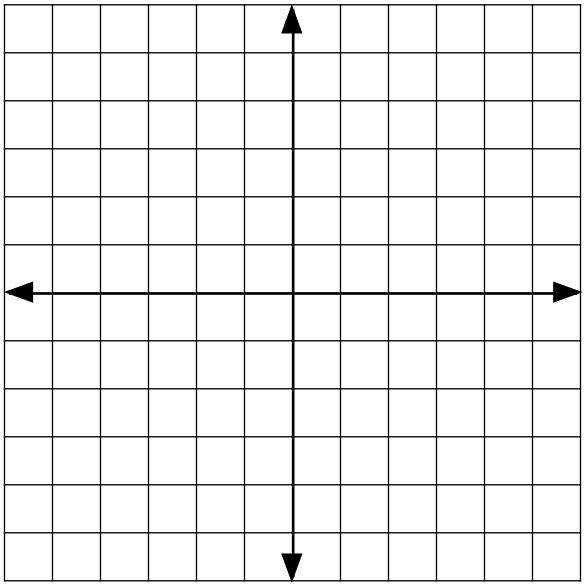
2) Draw line b: X + Y = -4 and label it “b”.

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”.

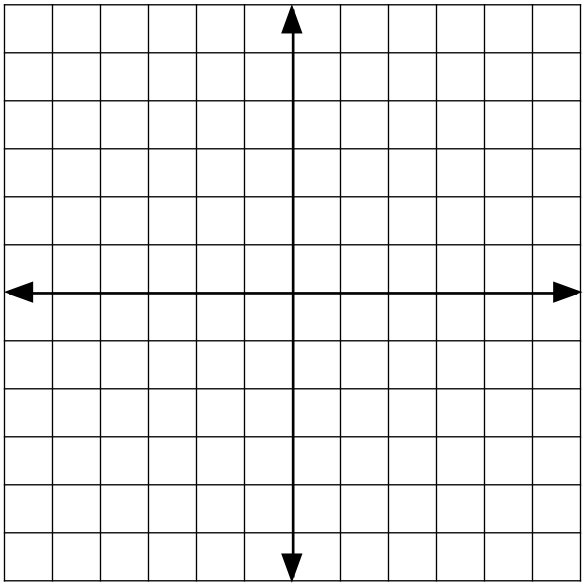
8) Draw line f: X + 2Y = -2 and label it “f”.

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”.

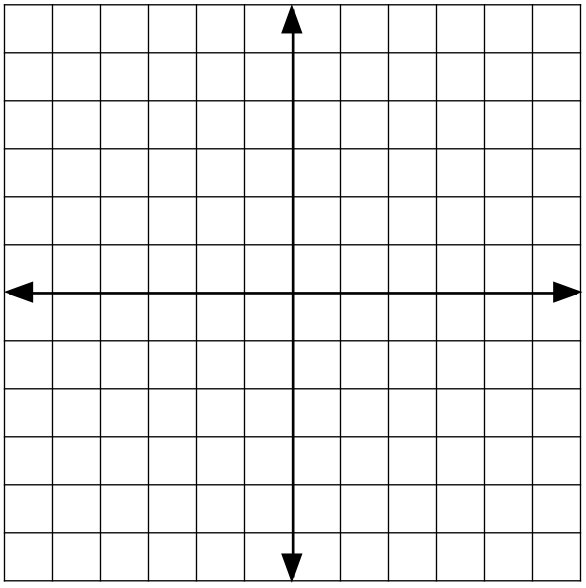
14) Draw line k: X + Y = -2 and label it “k”.

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.



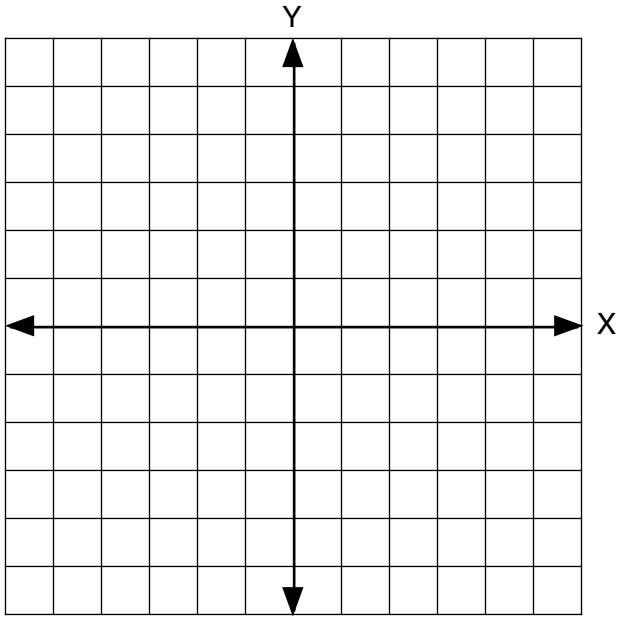
*Follow the directions for each set of equations.*

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

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.

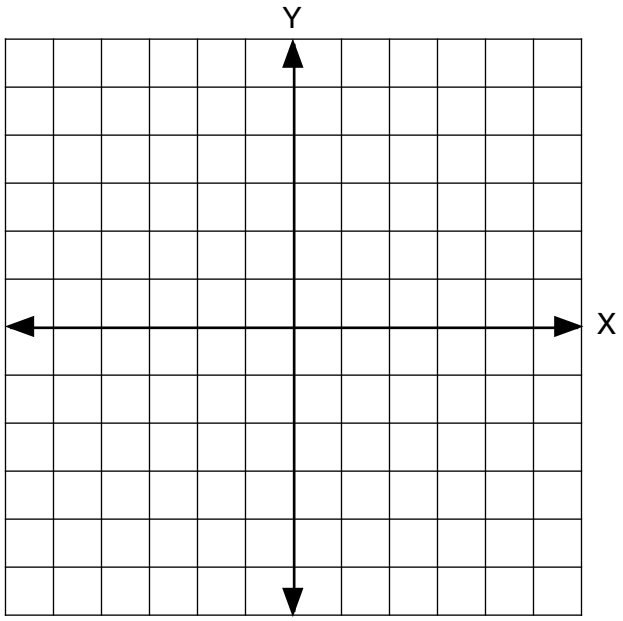



$Y = 1/2X$  $X - 3Y = -3$

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.

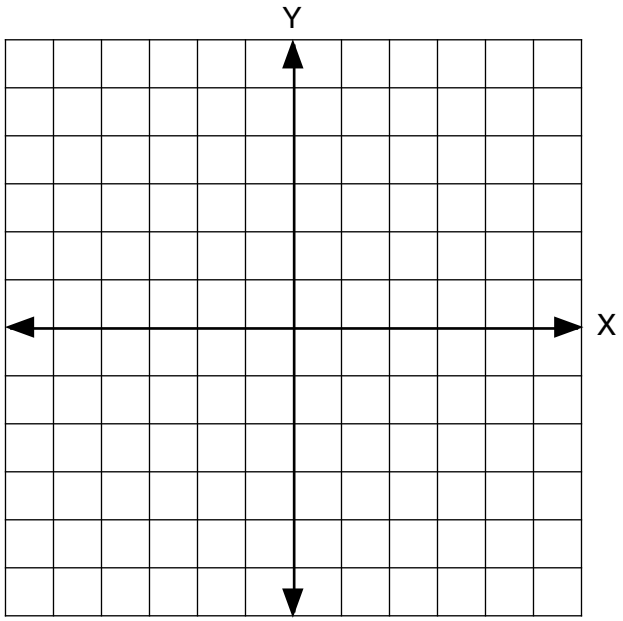



$X + Y = 2$  $-2X + Y = 5$

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.




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

10 Use the substitution method to solve the equations.

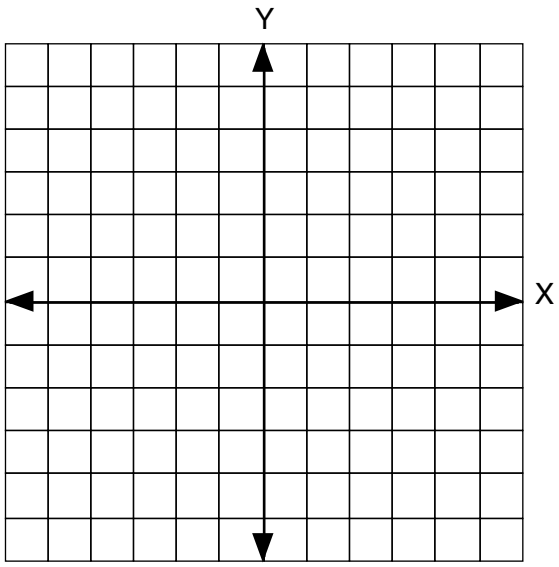
*Follow the directions for each set of equations.*

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

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.

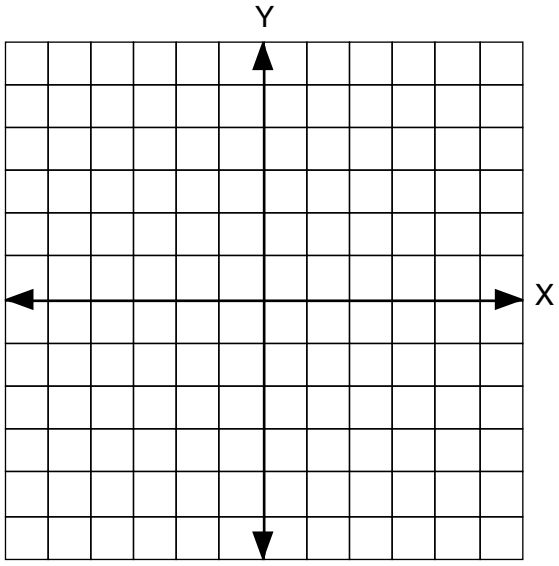



$2X + 3Y = 6, \quad 4X + 3Y = 0$

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.

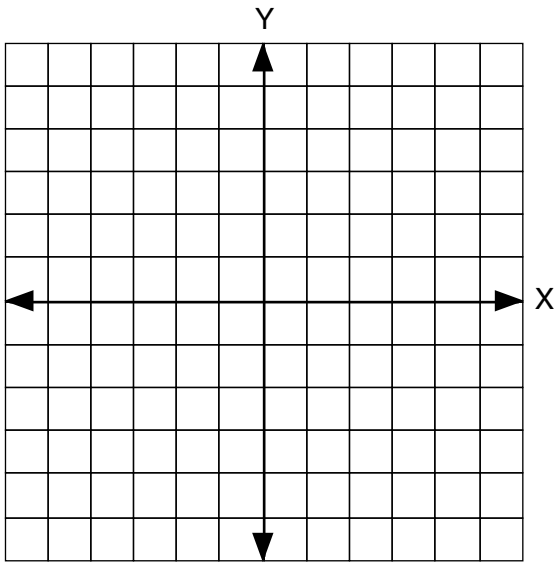



$-5X + 2Y = 8, \quad 3X + 2Y = -8$

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

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

*Build a rectangle and find the factors. Check by multiplying.*

1) $X^2 + 5X + 6$

2) $X^2 + 6X + 8$

3) $X^2 + 8X + 12$

4) $X^2 + 4X + 4$

5) $X^2 + 7X + 6$

6) $X^2 + 9X + 14$

7) $X^2 + 5X + 4$

8) $X^2 + 6X + 5$

*Find the factors and check by multiplying. (You will not have enough blocks to build most of these)*

9) $X^2 + 11X + 24$

10) $X^2 + 16X + 63$

11) $X^2 + 10X + 24$

12) $X^2 + 14X + 33$

13) $X^2 + 13X + 40$

14) $X^2 + 8X + 15$

15) $X^2 + 11X + 18$

16) $X^2 + 10X + 25$

*Build and find the factors, then check by multiplying. Don't forget to look for a greatest common factor first.*

1) $2X^2 + 20X + 42$

2) $5X^2 + 10X + 5$

3) $3X^2 + 27X + 42$

4) $2X^2 + 32X + 30$

5) $2X^2 + 14X + 24$

6) $3X^2 + 15X + 18$

7) $4X^2 + 36X + 32$

8) $2X^2 + 18X + 40$

*Find the factors, then check by multiplying. Don't forget to check for a GCF. (You may not have enough blocks to build some of these.)*

9) $2X^2 + 20X + 32$

10) $2X^2 + 22X + 56$

11) $3X^2 + 39X + 66$

12) $4X^2 + 28X + 48$

13) $10X^2 + 80X + 150$

14) $2X^2 + 22X + 60$

15) $4X^2 + 20X + 16$

16) $3X^2 + 39X + 108$

*Factor each polynomial and check by multiplying.*

1) $X^2 - 7X + 10$

2) $X^2 - 7X + 6$

3) $X^2 - 9X + 14$

4) $X^2 - 7X + 12$

5) $X^2 - 9X + 8$

6) $X^2 - 10X + 21$

7) $X^2 - 12X + 27$

8) $X^2 - 11X + 30$

9) $X^2 - 19X + 90$

10) $X^2 - 14X + 33$

11) $X^2 + 4X - 21$

12) $X^2 + 2X - 35$

13) $X^2 + 3X - 18$

14) $X^2 - 5X - 36$

15) $2X^2 - 9X - 5$

16) $2X^2 + 5X - 12$

*Find the square root and check.*

1) $\sqrt{X^2 + 8X + 16}$

2) $\sqrt{X^2 + 2X + 1}$

3) $\sqrt{X^2 + 16X + 64}$

*Divide and check.*

4) $X + 4 \overline{)\, X^2 + 7X + 12}$

5) $X + 5 \overline{)\, X^2 - 7X + 10}$

6) $X + 3 \overline{)\, X^2 + 9X + 5}$

7) $X - 1 \overline{)\, X^2 + 4X + 16}$

8) $X + 6 \overline{)\, X^2 + 12X + 18}$

9) $X + 1 \overline{)\, 2X^2 + 4X - 5}$

*Challenge.*

10) $X + 4 \overline{)\, X^3 - 3X^2 - 9X - 10}$

11) $X + 1 \overline{)\, 2X^3 + 8X^2 + 4X + 8}$

*Find the factors and check by multiplying.*

1) $X^2 - 9$

2) $X^2 - 64$

3) $X^2 - 36$

4) $Y^2 - 81$

5) $X^2 - 1$

6) $X^2 - 4$

7) $X^2 - 100$

8) $4X^2 - 121$

9) $A^2 - 144$

10) $9X^2 - 9Y^2$

11) $B^2 - 16$

12) $X^2 - 25$

13)
$$\begin{array}{r} 45 \\ \times\ 45 \\ \hline \end{array}$$

14) $85^2$

15)
$$\begin{array}{r} 36 \\ \times\ 34 \\ \hline \end{array}$$

16)
$$\begin{array}{r} 68 \\ \times\ 62 \\ \hline \end{array}$$

*Factor completely.*

1) $Y^4 - 16$

2) $A^4 - B^4$

3) $4X^3 - 4X$

4) $X^6 - Y^6$

5) $4X^3 + 20X^2 + 24X$

6) $2Y^3 + 2Y^2 - 12Y$

7) $2B^3 + 13B^2 + 6B$

8) $6X^2 - 18X$

9) $4Y^3 - 16Y$

10) $2X^4 - 2X^3 - 24X^2$

11) $3X^3 + 9X^2 - 30X$

12) $4X^2 - 36$

13) $A^3 + 6A^2 + 5A$

14) $6X^3 + 6X^2 - 12X$

15) $2Y^3 + 3Y^2 - 9Y$

16) $2X^3 - 50X$

*Follow the directions. Be sure to factor each equation completely.*

$X^2 + 5X - 14 = 0$

1) Find the factors.

2) Find all solutions of X.

3) Check by substituting the solutions.

$5B^2 - 125 = 0$

4) Find the factors.

5) Find all solutions of B.

6) Check by substituting the solutions.

$2X^2 - 7X + 6 = 0$

7) Find the factors.

8) Find all solutions of X.

9) Check by substituting the solutions.

$2X^2 + 8X - 154 = 0$

10) Find the factors.

11) Find all solutions of X.

12) Check by substituting the solutions.

*Follow the directions.*

108 inches = _____ feet

1) Select the appropriate unit multiplier.
2) Tell which unit of measure goes in the numerator, which goes in the denominator, and why.
3) Solve the equation.

96 feet = _____ yards

4) Select the appropriate unit multiplier.
5) Tell which unit of measure goes in the numerator, which goes in the denominator, and why.
6) Solve the equation.

45 pounds = _____ ounces

7) Select the appropriate unit multiplier.
8) Tell which unit of measure goes in the numerator, which goes in the denominator, and why.
9) Solve the equation.

25 meter = _____ centimeters

10) Select the appropriate unit multiplier.
11) Tell which unit of measure goes in the numerator, which goes in the denominator, and why.
12) Solve the equation.

7.8 milliliters = _____ liters

13) Select the appropriate unit multiplier.
14) Tell which unit of measure goes in the numerator, which goes in the denominator, and why.
15) Solve the equation.

50 meters = _____ kilometers

16) Select the appropriate unit multiplier.
17) Tell which unit of measure goes in the numerator, which goes in the denominator, and why.
18) Solve the equation.

*Use unit multipliers to solve.*

1) 4 $ft^2$ (square feet) = _____ $in^2$ (square inches)

2) 5 $m^2$ (square meters) = _____ $cm^2$ (square centimeters)

3) .2 $ft^2$ (square feet) = _____ $in^2$ (square inches)

4) 2.5 $ft^2$ (square feet) = _____ $in^2$ (square inches)

5) 4 $m^3$ (cubic meters) = _____ $dm^3$ (cubic decimeters)

6) 2 $km^3$ (cubic kilometers) = _____ $m^3$ (cubic meters)

7) 67.5 $ft^3$ (cubic feet) = _____ $yd^3$ (cubic yards)

8) 3,456 $in^3$ (cubic inches) = _____ $ft^3$ (cubic feet)

9) 46,656 $in^3$ (cubic inches) = _____ $yd^3$ (cubic yards)

10) 150 $cm^3$ (cubic centimeters) = _____ $m^3$ (cubic meters)

11) 25 $cm^2$ (square centimeters) = _____ $m^2$ (square meters)

*Fill in the blanks.*

12) 1 acre = _____ $ft^2$ (square feet)

13) 1 cord (of wood) = _____ ft x _____ ft x_____ ft = _____ $ft^3$ (cubic feet)

14) 1 yard (of concrete) = _____ $ft^3$ (cubic feet)

15) 1 yard (of carpet) = _____ $ft^2$ (square feet)

*Fill in the blanks with approximate values.*

1) 1 centimeter = _____ inches

2) 1 meter = _____ yards

3) 1 kilogram = _____ pounds

4) 1 liter = _____ quarts

5) 1 inch = _____ centimeters

6) 1 yard = _____ meters

7) 1 mile = _____ kilometers

8) 1 ounce = _____ grams

*Use unit multipliers to make the following conversions.*

9) 10 inches = _____ centimeters

10) 14 grams = _____ ounces

11) 21 yards = _____ meters

12) 44 kilograms = _____ pounds

13) 4.1 miles = _____ kilometers

14) 40 liters = _____ quarts

15) 7 ounces = _____ grams

16) 500 centimeters = _____ inches

*Simplify.*

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

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

3) $25^{\frac{1}{2}} =$

4) $64^{\frac{2}{3}} =$

5) $(X^{\frac{3}{4}})^{\frac{8}{3}} =$

6) $(A^{\frac{2}{3}})^{\frac{1}{4}} =$

7) $(Y^6 \cdot Y^3)^{\frac{1}{3}} =$

8) $81^{\frac{3}{4}} =$

9) $(9^{\frac{1}{4}})^{\frac{2}{1}} =$

10) $4^{\frac{1}{2}} \cdot 5 =$

11) $(8^{\frac{1}{2}})^{\frac{2}{3}} =$

12) $(X^2 \cdot X^8)^{\frac{1}{2}} =$

13) $(Y^{\frac{1}{4}} \cdot Y^{\frac{3}{4}})^{\frac{5}{1}} =$

14) $[(X^2)^3 \cdot X^2]^{\frac{3}{4}} =$

15) $[(A^5)^{\frac{1}{4}}]^{\frac{2}{3}} =$

16) $[(M^9)^{\frac{1}{6}}]^{\frac{2}{3}} =$

*Write each number using scientific notation.*

1) 200,000

2) 458,000,000

3) 91,600,000

4) .00032

5) .01268

6) .0000002

*Use scientific notation to solve. Remember significant digits and check your answer with a calculator.*

7) 200,000 x 5,290,000,000

8) 655,000 x 21,000,000

9) 45,100 x 801,000

10) .0006 x 3,000,000,000

11) .00042 x 60,000

12) .468 x .00037

13) 211,000 ÷ 9,000,000,000

14) $\frac{5,\ 280,000}{176,000}$

15) .275 ÷ .0025

*Change from base 10 to given base.*

1) $70_{10}$ = _____ 3

2) $70_{10}$ = _____ 5

3) $70_{10}$ = _____ 4

4) $200_{10}$ = _____ 6

5) $1{,}352_{10}$ = _____ 4

6) $1{,}352_{10}$ = _____ 5

*Change from given base to base 10.*

7) $225_{7}$ = _____ 10

8) $302_{5}$ = _____ 10

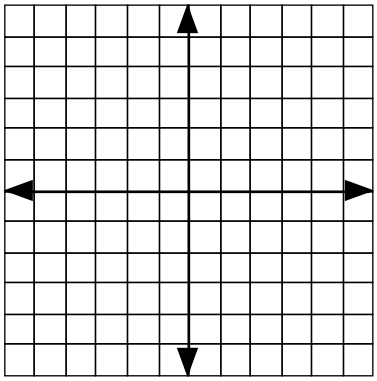
9) $1212_{3}$ = _____ 10

10) $2441_{5}$ = _____ 10

11) $5C2_{12}$ = _____ 10

12) $B73_{13}$ = _____ 10

*Answer the questions and graph each circle or ellipse.*



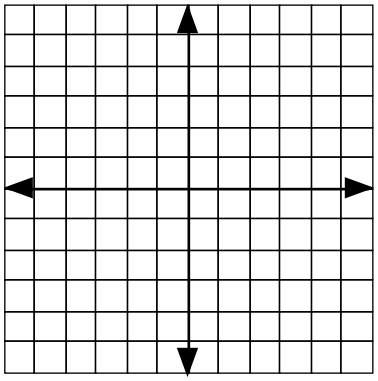
$X^2 + Y^2 = 25$

1) If X = 0, Y = _____ and _____

2) If Y = 0, X = _____ and _____

3) The center is _____ .

4) The radius is _____ .



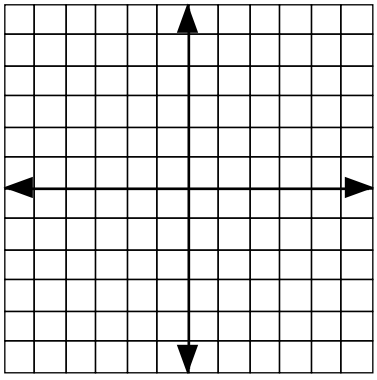
$(X+1)^2 + (Y+1)^2 = 4$

5) If X = -1, Y = _____ and _____

6) If Y = -1, X = _____ and _____

7) The center is _____ .

8) The radius is _____ .

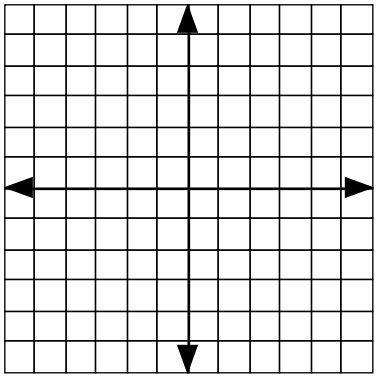


$4X^2 + 2Y^2 = 8$

9) If X = 0, Y = _____ and _____

10) If Y = 0, X = _____ and _____

11) The figure is a(n) _____ .

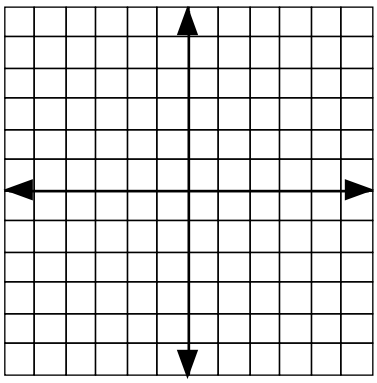


$5X^2 + 2Y^2 = 20$

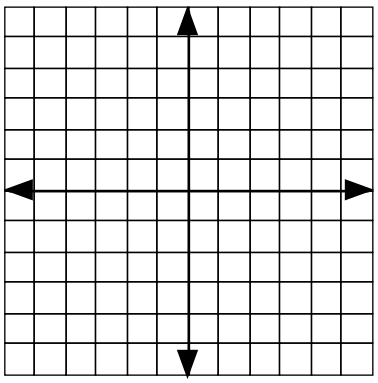
12) If X = 0, Y = _____ and _____

13) If Y = 0, X = _____ and _____

14) The figure is a(n) _____ .



15) Graph: $X^2 + Y^2 = 16$

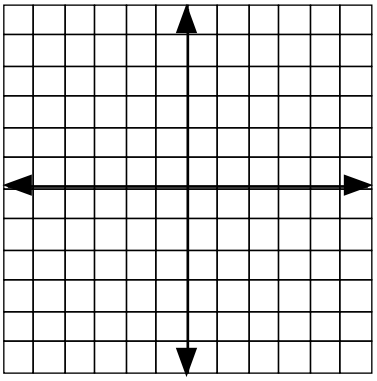


16) Graph: $(X+2)^2 + (Y-4)^2 = 4$

*Complete each table of values, then plot and draw each curve. (You may plot more points if necessary.)*

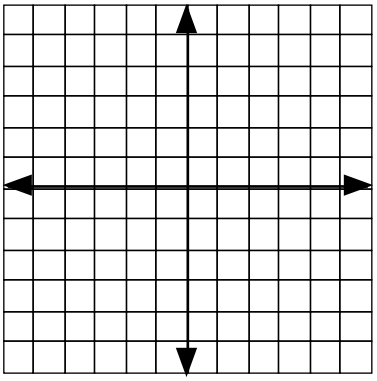
1) $Y = 3X^2$

| X | Y |
|---|---|
| 0 | |
| 1 | |
| -1 | |
| 2 | |
| -2 | |



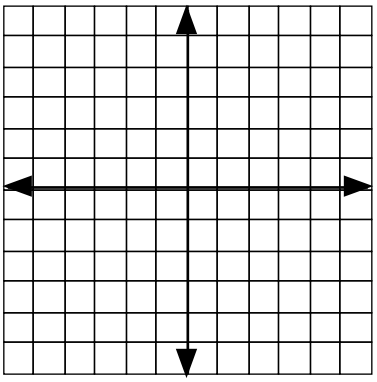
2) $XY = 4$

| X | Y |
|---|---|
| 1 | |
| -1 | |
| 2 | |
| -2 | |
| 4 | |
| -4 | |



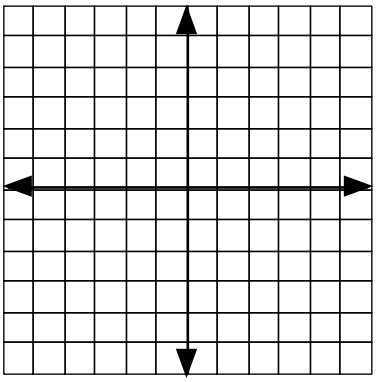
3) $Y = -1/3\ X^2$

| X | Y |
|---|---|
| 0 | |
| 3 | |
| -3 | |
| 4 | |
| -4 | |



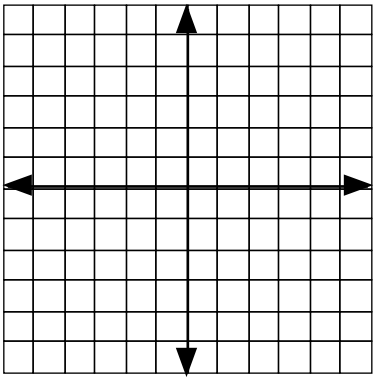
4) $XY = -6$

| X | Y |
|---|---|
| 1 | |
| -1 | |
| 2 | |
| -2 | |
| 3 | |
| -3 | |
| 6 | |
| -6 | |



5) $Y = X^2 + 1$

| X | Y |
|---|---|
| 0 | |
| 1 | |
| -1 | |
| 2 | |
| -2 | |



6) $XY = -5$

| X | Y |
|---|---|
| 1 | |
| -1 | |
| 5 | |
| -5 | |
| 1 1/4 | |
| -1 1/4 | |