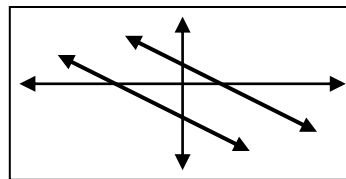Directions: Do work on another sheet of paper.

1.   Solve the system of equations by graphing $-2x + y = 3$ and $-3x + y = 6$

2.   Use the graph to determine if these lines are consistent,
      inconsistent or dependent.

Solve the systems of equation below by substitution.
If there is not just one answer, explain result.

3. $4x - y = 17$ 4. $x - 3y = -1$
      $3x - 2y = 14$ $2x - 3y = 4$

Solve the systems of equation below by elimination.
If there is not just one answer, explain result.

5. $2x + y = 13$ 6. $x - 2y = -2$
      $3x + 2y = 21$ $x - 2y = 2$

Solve the systems of equation below by the most convenient method.
If there is not just one answer, explain result.

7. $4x + 3 = -3y$ 8. $3x - y = 1$ 9. $0.06x + 0.05y = 640$ 10. $\dfrac{x}{5} + \dfrac{y}{6} = \dfrac{13}{30}$

      $-3(x + 7) = -4y$ $6x - 2y = 2$ $x + y = 12{,}000$ $\dfrac{x}{2} + \dfrac{2y}{6} = \dfrac{2}{3}$

Use two variables and write a system of two equations
and solve the system using algebra.

11.   A negative number is 6 times another negative number. The sum of the two numbers
      is -77. Write a system and solve for the two numbers.

12.   Theater tickets cost $8 for adults and $5 for children. If 380 tickets were sold and
      $2800 was collected. How many type of each of ticket was sold?

13.   King Street Printing recently charged 1.9 ¢per sheet of paper, but 2.4 ¢ per sheet for
      paper made of recycled fibers. Darren's bill for 150 sheets of paper was $3.41. How
      many sheets of each type were used?

14.   The length of a patio is 5 feet more than twice the width. The perimeter is 94 feet.
      What are the dimensions?

15. Oh Nuts! sells pistachio kernels for $6.50 per pound and almonds for $8.00 per pound. How much of each type should be used to make a 50-lb mixture that sells for $7.40 per pound?

16. Spice of Life sells ground sumac for $1.35 per ounce and ground thyme for $1.85 per ounce. Aman wants to make a 20-oz Zahtar seasoning blend using the two spices that sells for $1.65 per ounce. How much of each spice should Aman use?
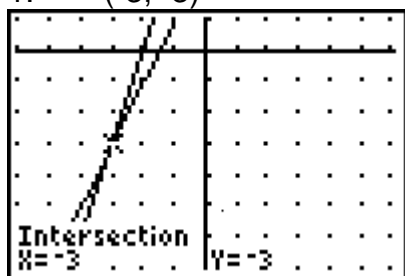
Approximate x <u>BY GRAPHING</u> – do <u>NOT</u> use algebra.

17. Approximate x for: $\frac{1}{3} x - 2 = 1$

18. Approximate x for: $5 - \frac{1}{2} x = x - 4$

<u>Answers</u>

1. (-3, -3)

2. Inconsistent

3. (4, -1)

4. (5,2)

5. (5,3)

6. No solution (inconsistent)

7. (-3, 3)

8. An infinite number of solutions

9. (4000,8000)

10. (-2,5)

11. (-11,-66)

12. A=300, c=80

13. 38 pages of regular
    112 pages of recycled

14. w=14 ft, l=33 feet

15. 20 lb of pistachio
    30 lf of almonds

16. 8 oz of sumac
    12 oz of thyme
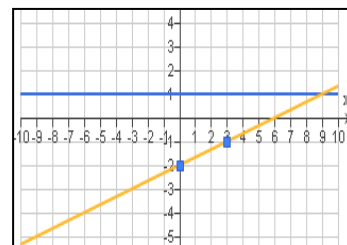
17. $y_1 = \frac{1}{3} x - 2$
    $y_2 = 1$

    Answer
    x= 9

18. $y_1 = 5 - \frac{1}{2} x$
    $y_2 = x - 4$

    Answer
    x= 6