

Topics 1 – 4

1. Solve each of the following equations.

a)  $3(-2 - 3x) = -9x - 4$

b)  $4(4 - w) = 3(2w + 2)$

2. Solve each equation for the specified variable.

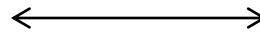
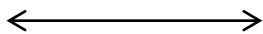
a)  $A = \frac{1}{2}(b_1 + b_2)h$ ; for h

b)  $I = prt$ ; for p

3. Graph the solution of each inequality on the number lines.

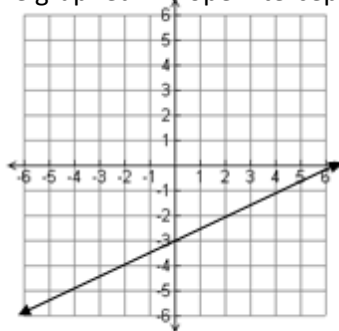
a)  $-2(v + 4) - 4v > -12 - 2v$

b)  $\frac{2}{5}f - 4 \leq 2$

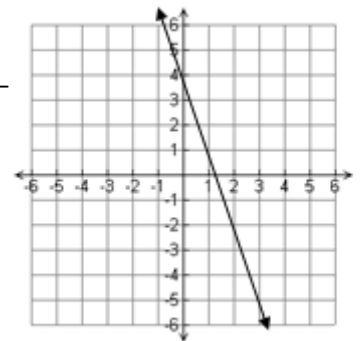


4. State the equation of the line graphed in slope intercept form

a) \_\_\_\_\_



b) \_\_\_\_\_



5. State the equation in slope intercept form of the line through the given two points.

a)  $(6, -8)$  and  $(-2, 4)$  \_\_\_\_\_ b)  $(-3, -7)$  and  $(5, 1)$  \_\_\_\_\_

6. (Multiple Choice: circle the correct answer)

a) What is an equation in standard for that has x-intercept 2 and y-intercept  $-3$ ?

- A)  $3x + 2y = -6$       B)  $3x - 2y = 6$       C)  $2x - 3y = 6$       D)  $2x + 3y = -6$

b) What is an equation in standard for that has x-intercept 8 and y-intercept 1?

- A)  $8x + y = 8$       B)  $8x - y = -8$       C)  $x - 8y = 8$       D)  $x + 8y = 8$

7. (Multiple Choice: circle the correct answer)

a) What is an equation of the line that contains the point  $(3, -1)$  and is perpendicular to the line whose equation is  $y = -3x + 2$ ?

A.  $y = -3x + 8$

B.  $y = -3x$

C.  $y = \frac{1}{3}x$

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

b) What is an equation of the line that passes through the point  $(7, 3)$  and is parallel to the line  $4x + 2y = 10$ ?

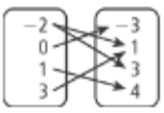
A.  $y = \frac{1}{2}x - \frac{1}{2}$

B.  $y = -\frac{1}{2}x + \frac{13}{2}$

C.  $y = 2x - 11$

D.  $y = -2x + 17$

8. State the domain and range.

a)  Domain: \_\_\_\_\_  
Range: \_\_\_\_\_

b) 

x	3	5	7	8	11
y	6	7	7	9	14

 Domain: \_\_\_\_\_  
Range: \_\_\_\_\_

9. State whether each sequence is arithmetic.

a) 3, 6, 12, 24, 48, ... Circle: yes or no

b) 5, 7, 9, 11, 13, 15 ... Circle: yes or no

c) -5, -8, -11, -14, ... Circle: yes or no

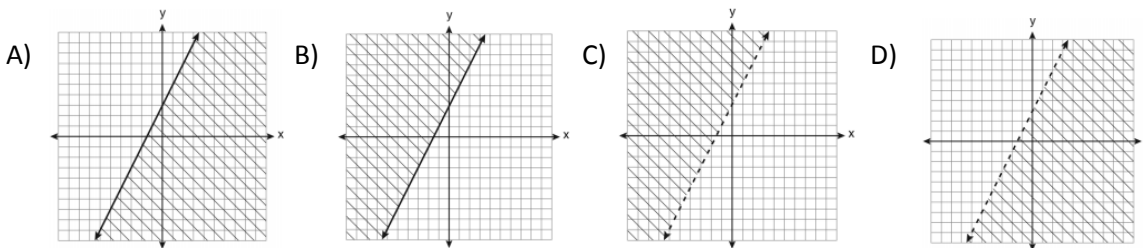
d) 2, 3, 5, 8, 11, 16 ... Circle: yes or no

10. What is the solution to the system of equations?

$$\begin{cases} y = \frac{5}{2}x - 4 \\ 4x - 2y = 22 \end{cases}$$

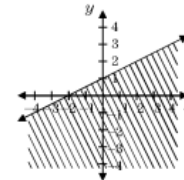
11. (Multiple Choice: circle the correct answer)

a) Which graph represents the solution of  $y \leq 2x + 3$ ?



b) The graph of which inequality is shown in the accompanying diagram?

A.  $y > \frac{1}{2}x + 1$     B.  $y \geq \frac{1}{2}x + 1$     C.  $y < \frac{1}{2}x + 1$     D.  $y \leq \frac{1}{2}x + 1$



12. (Multiple Choice: circle the correct answer)

Which set of ordered pairs is *not* a function?

A.  $\{(3, 1), (2, 1), (1, 2), (3, 2)\}$

B.  $\{(4, 1), (5, 1), (6, 1), (7, 1)\}$

C.  $\{(1, 2), (3, 4), (4, 5), (5, 6)\}$

D.  $\{(0, 0), (1, 1), (2, 2), (3, 3)\}$

13. (Multiple Choice: circle the correct answer)

Mark, an appliance repairman, earns \$35 per hour for time and labor and an extra amount as an appointment fee. Look at the table. Choose the linear function,  $f$ , Mark can use to determine his pay.

**APPLIANCE REPAIR  
TOTAL CHARGES**

$t$ (hours)	$C$ (dollars)
1	75
3	145
5	215
7	285

A.  $f(t) = 35t + 40$

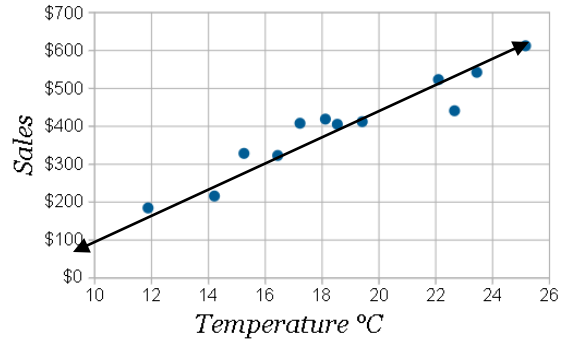
C.  $f(t) = 75t$

B.  $f(t) = 40t + 35$

D.  $f(t) = 45t$

14. Write the equation of the trend line in slope-intercept form.

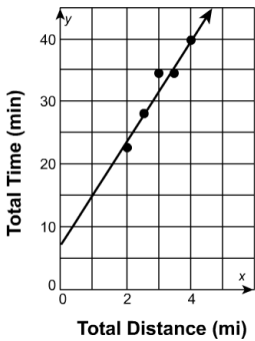
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15. (Multiple Choice: circle the correct answer)

Each day, Yumiko does sit-ups for a few minutes before running.

Distance (mi)	2	2.5	3	3.5	4
Time (min)	23	28	34	34	40



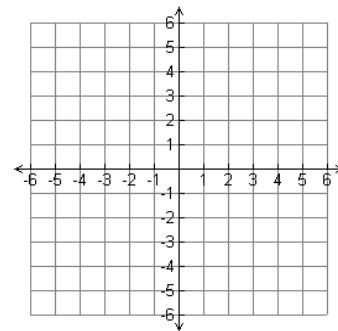
What does the y-intercept of the line represent?

- A. average time spent doing sit-ups
- B. average time spent running
- C. total time spent running
- D. average distance run

16. Solve the system by graphing. Write your solution as an ordered pair.

$$\begin{cases} y = 3x - 4 \\ y = -\frac{1}{2}x + 3 \end{cases}$$

Solution: \_\_\_\_\_



17. Decide if each system has no solution, one solution or infinitely many solutions.

a)  $\begin{cases} y = \frac{1}{4}x + 3 \\ x - 4y = 8 \end{cases}$

b)  $\begin{cases} y = -\frac{1}{2}x - 4 \\ x + 2y = -8 \end{cases}$

18. Find the solution to the system of equations. Write the solution as an ordered pair.

$$a) \begin{cases} 5x + 4y = -14 \\ 3x + 6y = 6 \end{cases}$$

$$b) \begin{cases} 2x + 8y = 6 \\ -5x - 20y = -15 \end{cases}$$

19) On Monday Joe bought 10 cups of coffee and 5 doughnuts for his office at the cost of \$16.50. It turns out that the doughnuts were more popular than the coffee. On Tuesday he bought 5 cups of coffee and 10 doughnuts for a total of \$14.25. How much was each cup of coffee?

20. Choose the graph that matches the system of inequalities.

$$\begin{cases} 3x - 5y \leq 15 \\ 2x + 3y > -6 \end{cases}$$

