

Name \_\_\_\_\_

### Summer Algebra I Extended Packet

This packet should help prepare you for Algebra I Extended at Trumbull High School. Please complete these problems before the first day of school.

A TI 84 graphing calculator is required for all math classes at Trumbull High. You may use the calculator for all problems of this packet.

1. Evaluate.

a)  $(2 + 5)^2 - (3)(9)$

b)  $[2 - 5(14 - 9)] + 2 \div 2$

c)  $\frac{2(4-1)^2}{5^2-9}$

d)  $\frac{6^2-3^3}{4-5(8-4)}$

2. Evaluate  $3x - 2y$  given that  $x = 3, y = -4$ .

3. Evaluate  $x^2$  given that  $x = -5$ .

4. Solve each equation. Show all work.

a.  $-14x + 5 = 47$

b.  $\frac{x}{3} - 5 = -2$

c.  $50 + 9x = 11x + 24$

d.  $8m - 35 = 5(m - 11)$

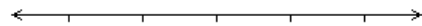
e.  $12x + 16 = 10 - 3(x - 2)$

f.  $\frac{x-3}{2} = 7$

5. Solve the following inequalities. Show work and graph the solutions on the given number lines.

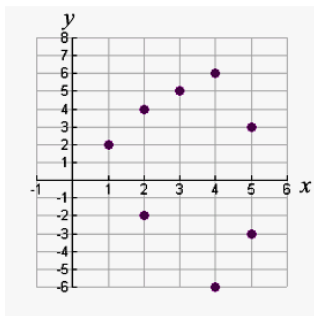
a.  $-5x - 2 < 13$

b.  $4x + 2 < -6$

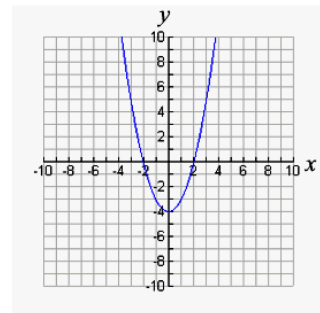


6. Determine if each graph is a function. Explain.

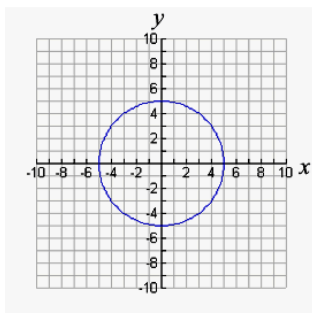
a.



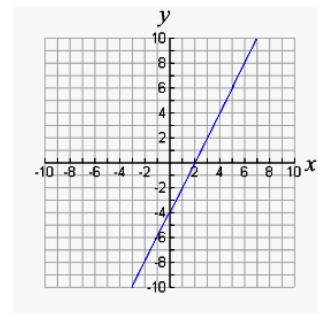
b.



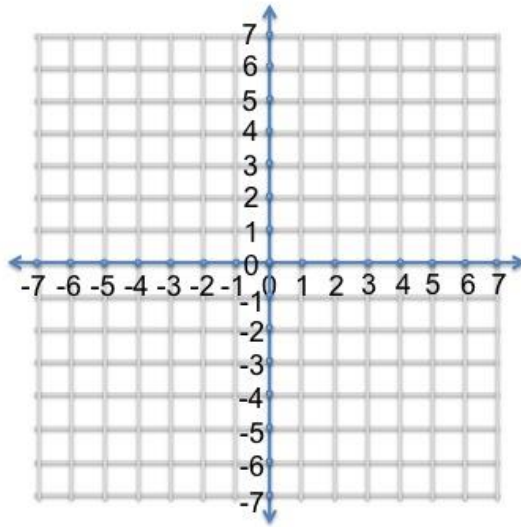
c.



d.



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



8. Find the slope of the line through  $(7, 12)$  and  $(4, -9)$ .

9. Given the line  $y = 3x + 5$ ,  
a. Identify the slope.

b. Identify the y-intercept

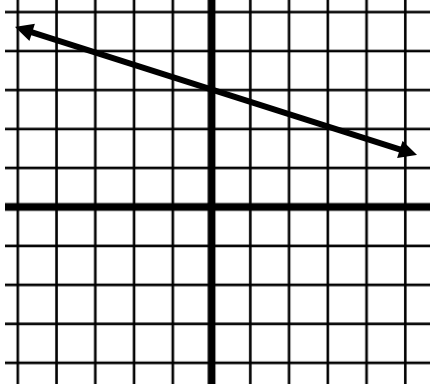
10. Write an equation of a line that has a slope of 2 and a y-intercept of 7.

11. Write an equation of a line that has a slope of 3 and contains (4, 6).

12. Write an equation of a line that contains (1, 4) and (2, 7).

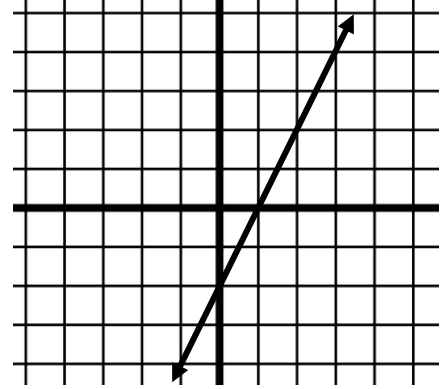
13. Write an equation of a line in slope intercept form for the lines graphed below.

a.



Equation: \_\_\_\_\_

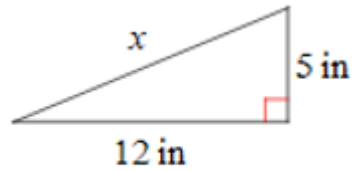
b.



Equation: \_\_\_\_\_

14. Find the missing side of the triangle using the Pythagorean Theorem.

a.



b.

