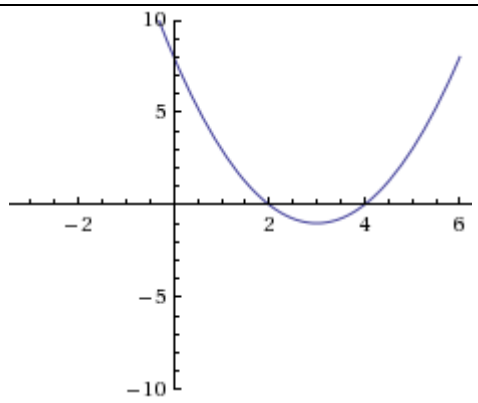
Algebra 1, Unit 5 Assessment REVIEW **Name**_____

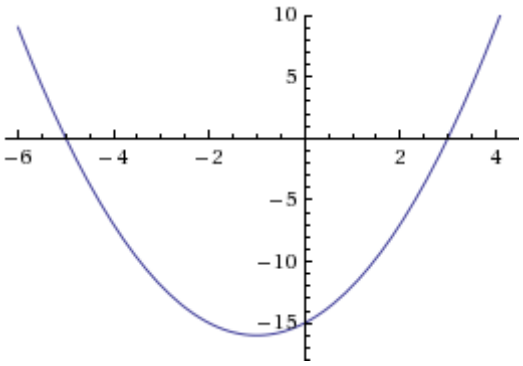
PART A: TARGET 5A – UNDERSTANDING GRAPHS OF QUADRATIC FUNCTIONS

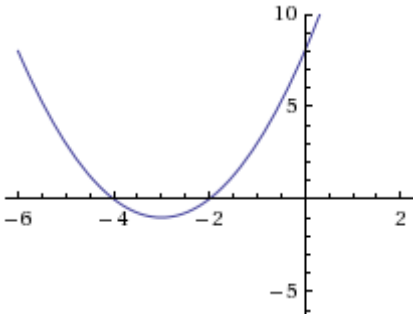
NO CALCULATOR FOR THIS SECTION

1. Find the correct rule for the following graphs and tables by using the list on the right. Not every rule in the list will be used.

x	y
-3	0
-2	7
-1	12
0	15
1	16
2	15
3	16
4	7
5	0







A. $f(x)=(x-2)(x-4)$

B. $y=-x^2+2x+15$

C. $h(x)=(x+5)(x-3)$

D. $y=(x+2)(x+4)$

E. $h(x)=-(x+5)(x-3)$

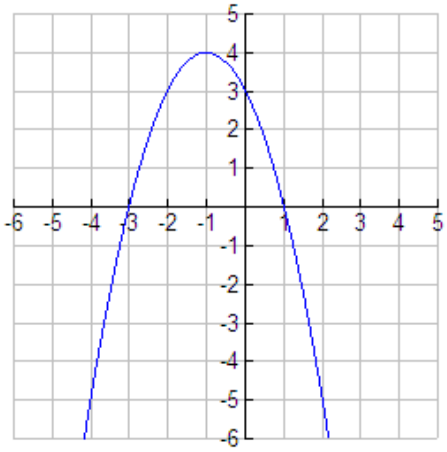
F. $y=x^2+2x+15$

G. $y=-x^2-6x+8$

H. $y=x^2+6x+8$

I. $f(x)=(x-2)(x-4)$

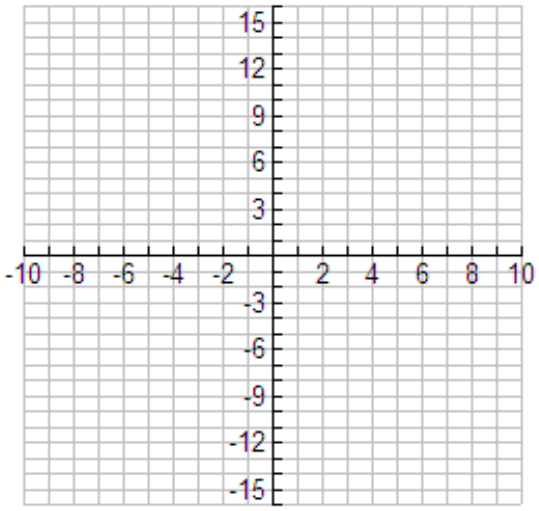
2. A graph of a quadratic function is shown to the right. Identify the following.



- x intercepts:
- y intercept:
- line of symmetry:
- vertex:

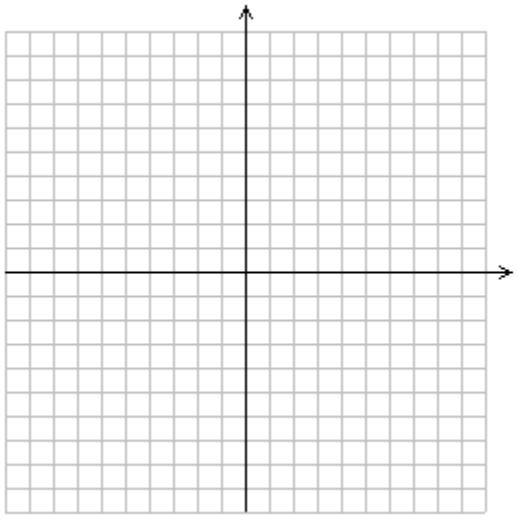
3. Consider the graph of $y = x^2 - 4x - 12$.
   Without a calculator, find the following and sketch a graph of the function.

   - y intercept:
   - x intercepts:
   - line of symmetry:
   - vertex:
   - Domain:
   - Range:



4. By hand, find the following information about the function $h(x) = (x+3)(x-9)$.
   Use the information to sketch a graph.

   - y intercept:
   - x intercepts:
   - line of symmetry:
   - vertex:
   - Domain:
   - Range:



5. Compare and contrast the graphs of $f(x) = 3x^2 - 6$ and $g(x) = -x^2 - 6$.

PART B: TARGET 5B – UNDERSTANDING QUADRATIC EXPRESSIONS

CALCULATOR PERMITTED FOR THIS SECTION

6. Simplify: $(2x^2 - 3x + 7) + (6x^2 + 5x - 9) - (3x^2 - 2x + 12)$

7. Factor $x^2 - 7x + 10$.

8. Expand the product $(x + 9)(x - 3)$

9. Expand the product $(4x - 3)(x + 5)$.

10. A factor of $4y^2 + 17y - 15$ is: (*Circle your choice*)

    a. $4y + 3$

    b. $y - 15$

    c. $y^2 + 3$

    d. $y + 5$

11. Factor $x^2 - 81$.

12. Factor $x^2 - 5x - 14$.

PART C: TARGET 5C – UNDERSTANDING SOLUTIONS TO QUADRATIC PROBLEMS

CALCULATOR PERMITTED FOR THIS SECTION

13. Use the quadratic formula to solve $6x^2 - 3x - 20 = 10$

14. Solve $x^2 - 3x - 18 = 0$ by factoring.

15. The profit that Pam's Pizza can make every night depends on how much Pam charges per pizza (she only sells large pizzas). The function $P(c) = 40c - 2c^2$ models the profit, P, in dollars where c is the cost of a large pizza in dollars.

    How much was the cost of a large pizza if Pam had $150 profit last night?

16. A right triangle has a hypotenuse of 13, and one leg that is 7 units shorter than the other (as shown in the diagram). Find the length of each leg. (Show the work leading to your answer.)