

Name: \_\_\_\_\_

Work in groups to answer as many problems as you can. Ask questions if you get stuck. The numbers used on this worksheet may require a calculator. Keep in mind that numbers you will have on exams will be nice enough to do without a calculator.

1. Complete the square on the following functions.

(a)  $f(x) = x^2 - 2x - 3$

(d)  $f(x) = x^2 + 4x - 24$

Answer: \_\_\_\_\_

Answer: \_\_\_\_\_

(b)  $f(x) = x^2 + 4x$

(e)  $f(x) = x^2 - x$

Answer: \_\_\_\_\_

Answer: \_\_\_\_\_

(c)  $f(x) = x^2 - 6x$

(f)  $f(x) = -4x^2 + 8$

Answer: \_\_\_\_\_

Answer: \_\_\_\_\_

2. Write each of the following quadratics in “standard form”.

(a)  $f(x) = 2x^2 - 8x + 16$

(d)  $f(x) = 8x^2 + 2$

Answer: \_\_\_\_\_

Answer: \_\_\_\_\_

(b)  $f(x) = -x^2 - 4x - 3$

(e)  $f(x) = 4x^2 - 8x + 7$

Answer: \_\_\_\_\_

Answer: \_\_\_\_\_

(c)  $f(x) = 3x^2 + 12x - 1$

(f)  $f(x) = x^2 + 4$

Answer: \_\_\_\_\_

Answer: \_\_\_\_\_

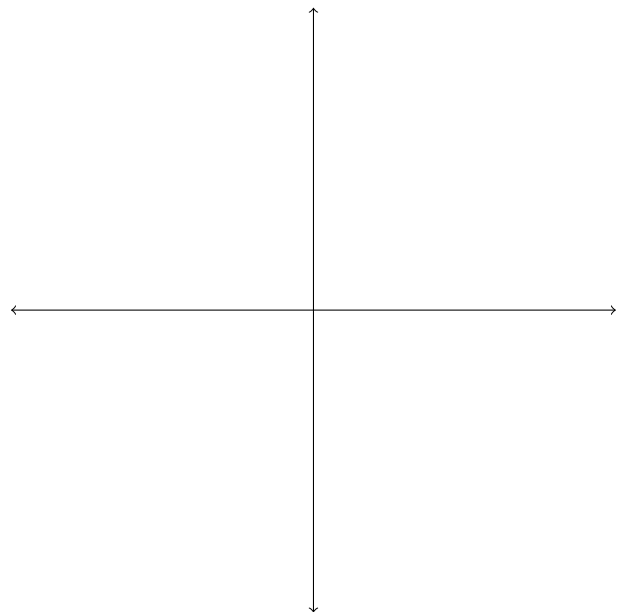
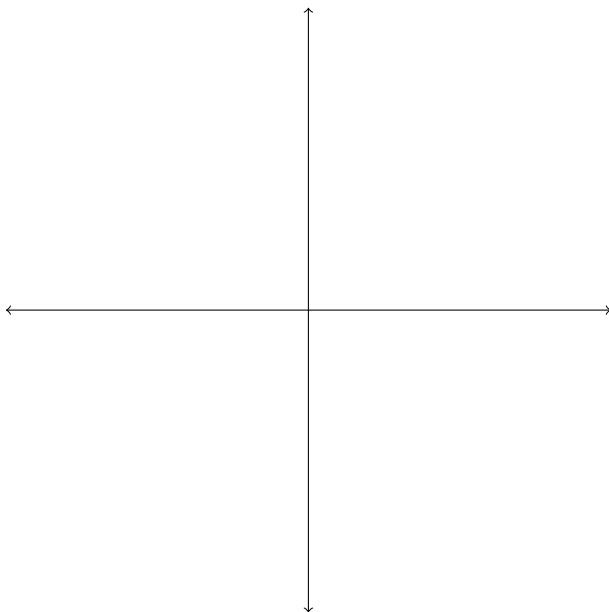
3. Write each of the following quadratic functions in “standard form.” Then fill out the table and plot the graph, labeling the y intercept, roots and the vertex.

(a)  $f(x) = -x^2 - 4x - 3$

(b)  $f(x) = 4x^2 - 8x + 7$

Domain:		$y$ -intercept:	
Range:		Minimum:	
Maximum:		Increasing:	
Decreasing:		Roots:	

Domain:		$y$ -intercept:	
Range:		Minimum:	
Maximum:		Increasing:	
Decreasing:		Roots:	

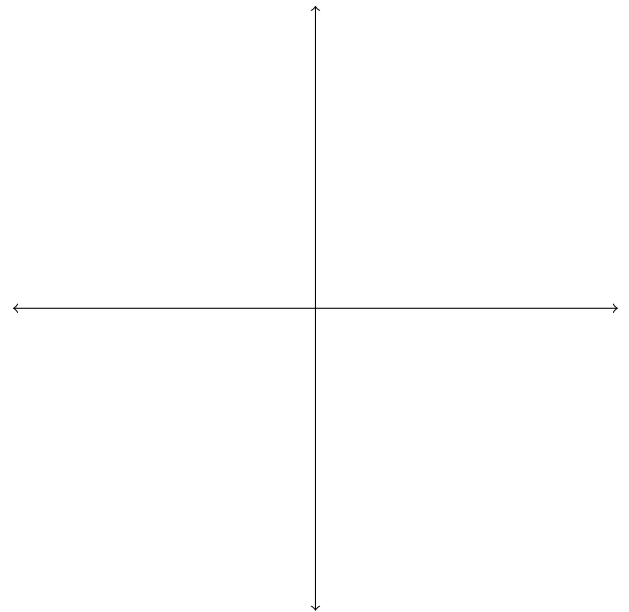
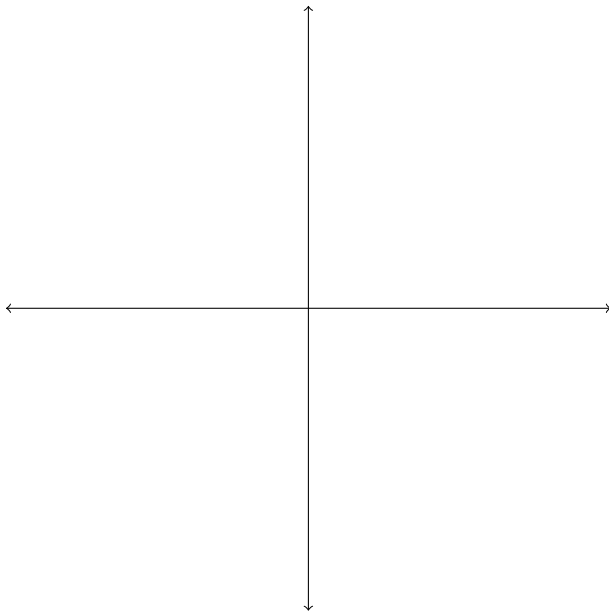


(c)  $f(x) = x^2 + 4$

(d)  $f(x) = 5x^2 + 10x - 15$

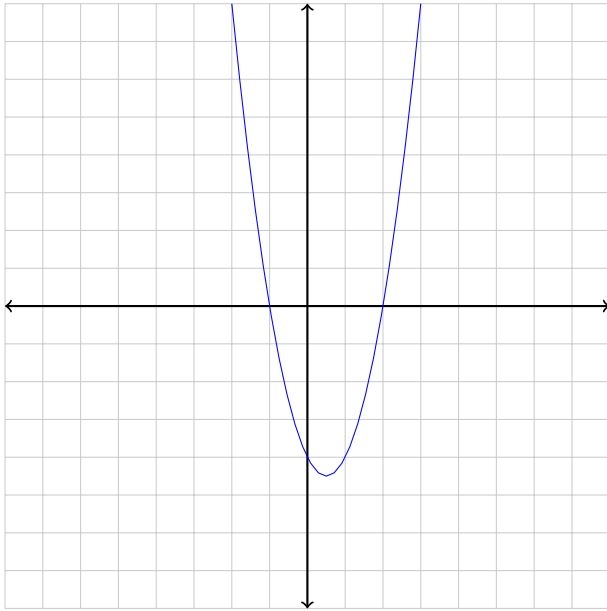
Domain:		$y$ -intercept:	
Range:		Minimum:	
Maximum:		Increasing:	
Decreasing:		Roots:	

Domain:		$y$ -intercept:	
Range:		Minimum:	
Maximum:		Increasing:	
Decreasing:		Roots:	

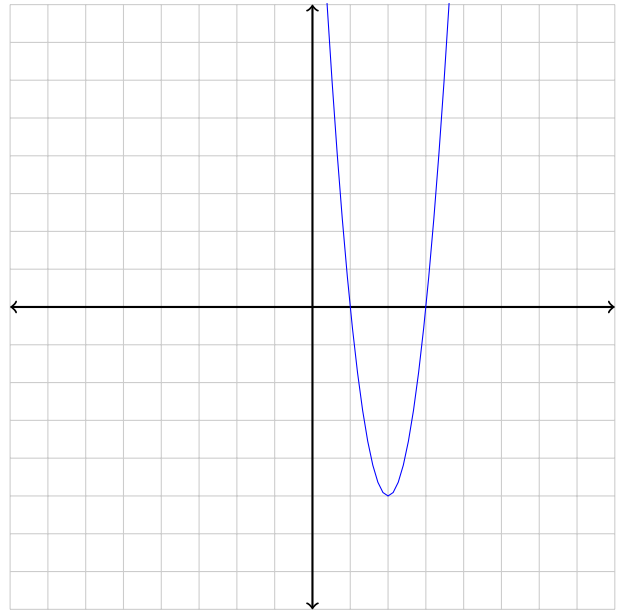


4. For each of the given graphs, determine which function it represents. Each square represents 1 unit.

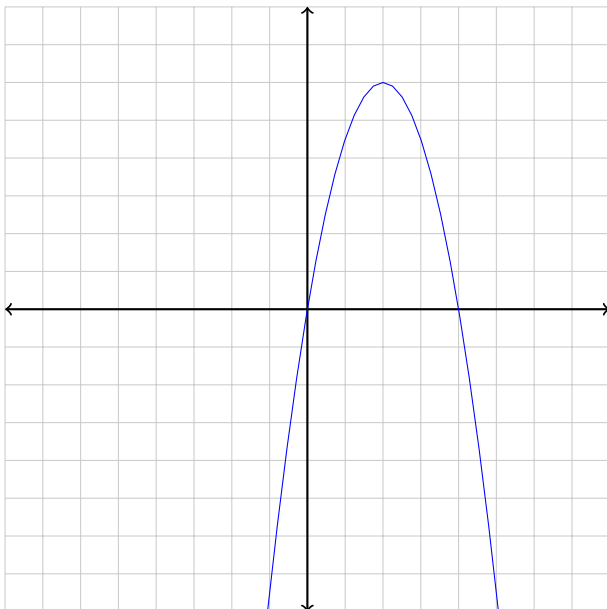
(a)



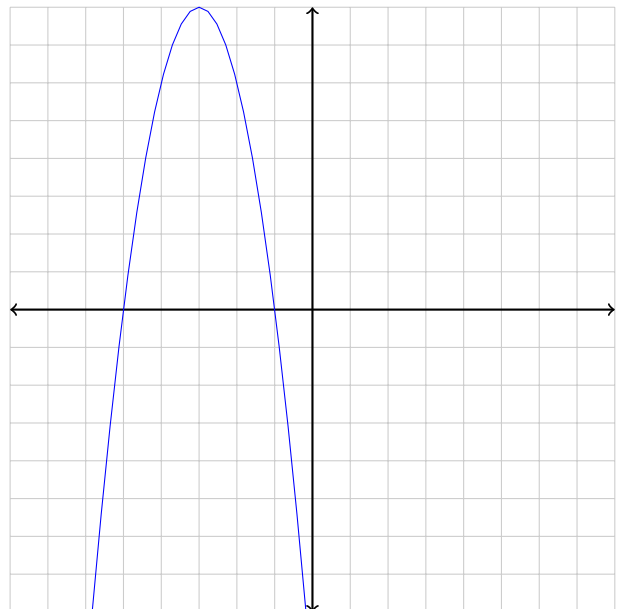
(c)



(b)



(d)



5. Describe each of the following transformations of  $f(x)$ , in words. Be careful which order you write the transformations in.

(a)  $f(x - 2)$

(e)  $f(3x) - 6$

(b)  $5f(x - 2)$

(f)  $f(-x) - 1$

(c)  $f(x) - 3$

(g)  $2f(3x)$

(d)  $f(x - 3) + 3$

(h)  $-f(x) - 7$