Name:_____

> This assignment is worth 100 points. You will be awarded 40 points for attempting the entire assignment (that is answer all problems). All of problems will be graded for the remaining 60 points. The space left between each question is indicative of how much work you should show. If there are any problems you find particularly difficult, circle them in red. If there are any particular questions you would like feedback on, circle them in green. These are examples of questions that might appear on an exam/quiz. If you use a calculator to help, make sure you can also do them without it.

1. Write each of the following quadratics in "standard form".

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

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

Answer:_____

Answer:_____

(b) $f(x) = 3x^2 + 12x + 9$

(e) $f(x) = 2x^2 - 2x - 5$

Answer:_____

Answer:_____

(c) $f(x) = -x^2 + 6x - 4$
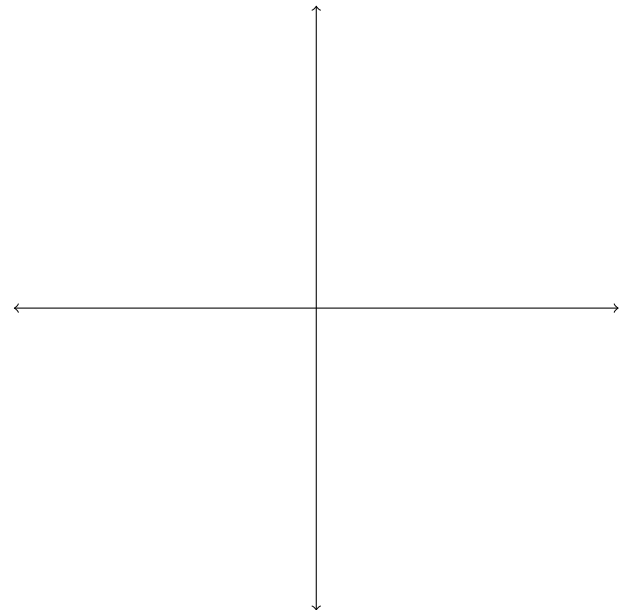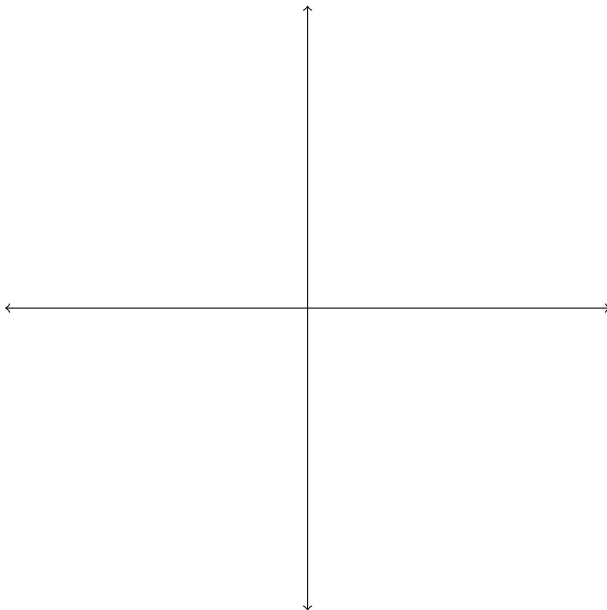
(f) $f(x) = -4x^2 + 8$

Answer:_____

Answer:_____

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

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

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

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

Cont.

(c) $f(x) = -3x^2 - 12x + 1$ (d) $f(x) = 2x^2 + 8$

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

Domain:		y-intercept:	
Range:		Minimum:	
Maximum:		Increasing:	
Decreasing:		Roots:	
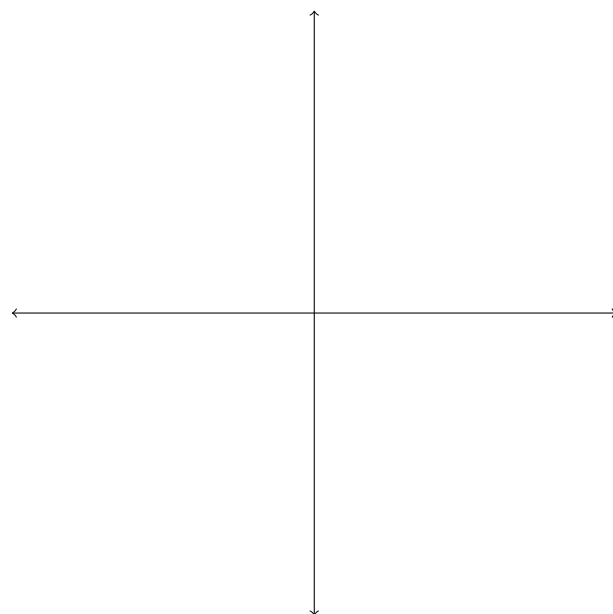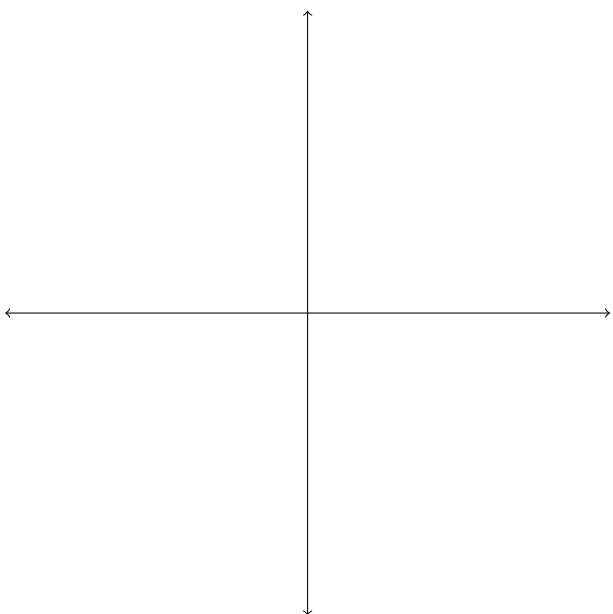
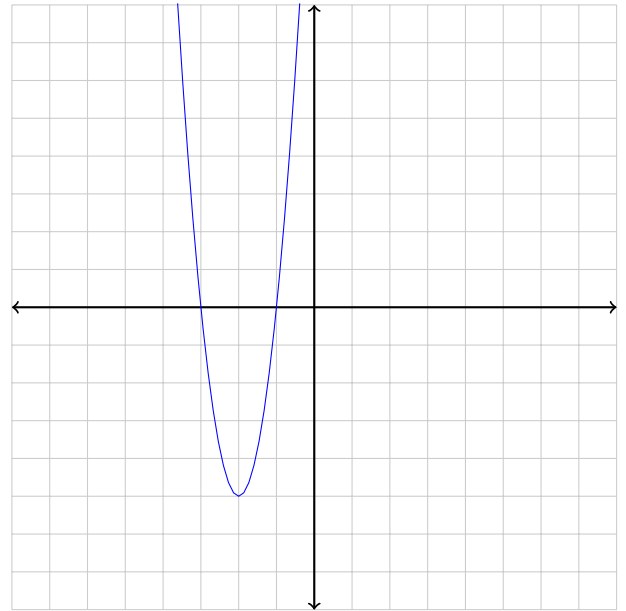3. For each of the given graphs, determine which function it represents. Each square represents 1 unit.

(a)
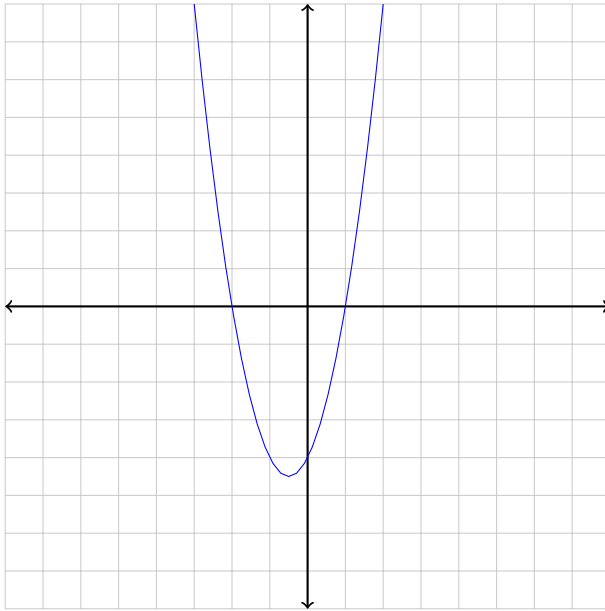
     a) $f(x) = (x+1)(x-2)$ c) $f(x) = 2(x+1)(x-2)$
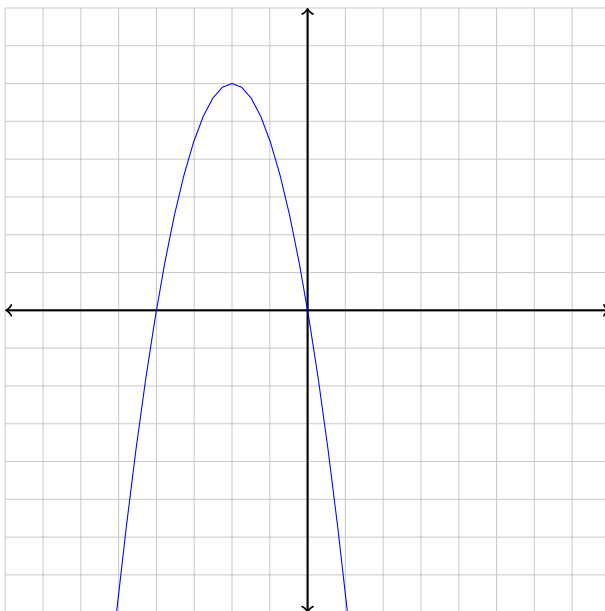
     b) $f(x) = (x-1)(x+2)$ d) $f(x) = 2(x-1)(x+2)$
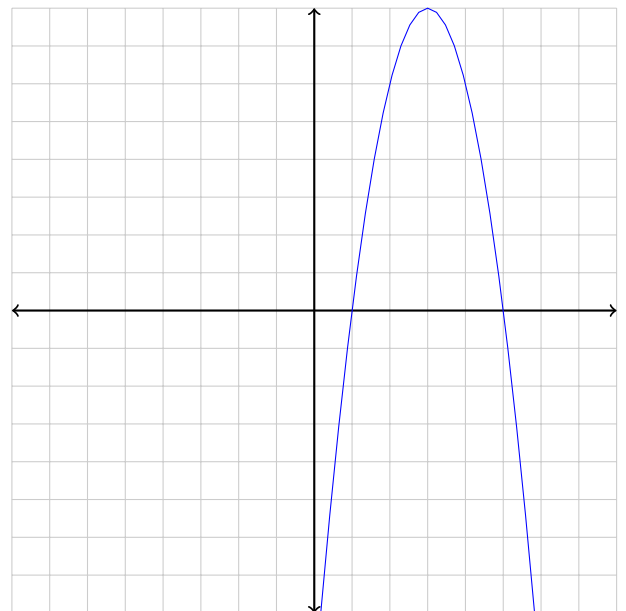
(b)

     a) $f(x) = -\frac{3}{2}x(x-4)$ c) $f(x) = -\frac{2}{3}x(x-4)$

     b) $f(x) = -\frac{3}{2}x(x+4)$ d) $f(x) = -\frac{2}{3}x(x+4)$

(c)

     a) $f(x) = 4(x+3)(x+1)$ c) $f(x) = 5(x+3)(x+1)$

     b) $f(x) = 4(x-3)(x-1)$ d) $f(x) = 5(x-3)(x-1)$

(d)

     a) $f(x) = -2(x+1)(x+5)$ c) $f(x) = -2(x-1)(x-5)$

     b) $f(x) = 2(x+1)(x+5)$ d) $f(x) = 2(x-1)(x-5)$

<div align="right">Cont.</div>

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

(a) $-f(x+2)$

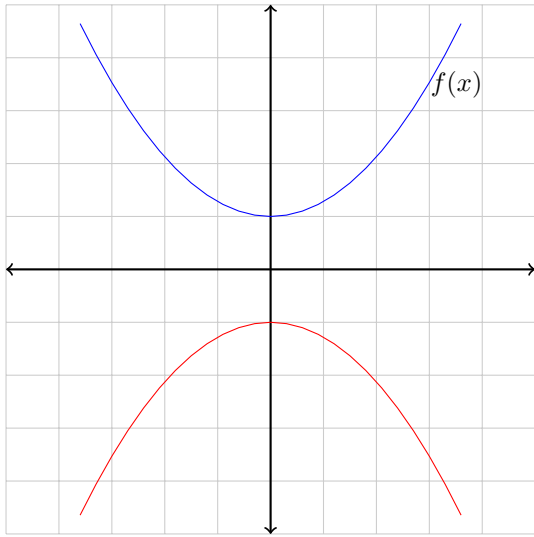(e) $f(2x)+9$

(b) $3f(x-1)$

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

(c) $f(x)+4$
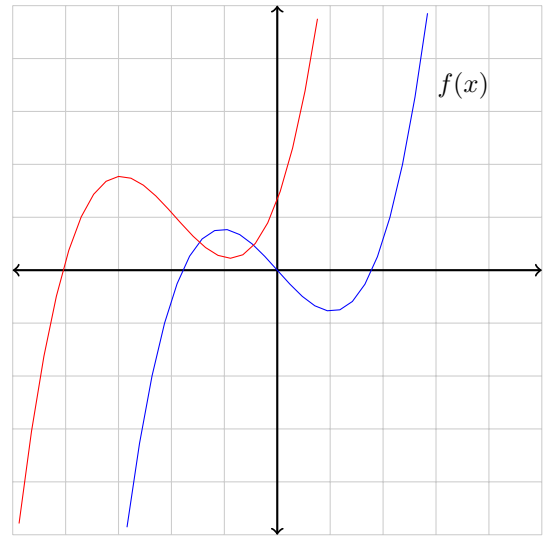
(g) $3f(2x)$

(d) $f(x+5)-3$

(h) $-f(x)+4$

5. For each of the graphs, describe the transformation of $f(x)$.

(a)

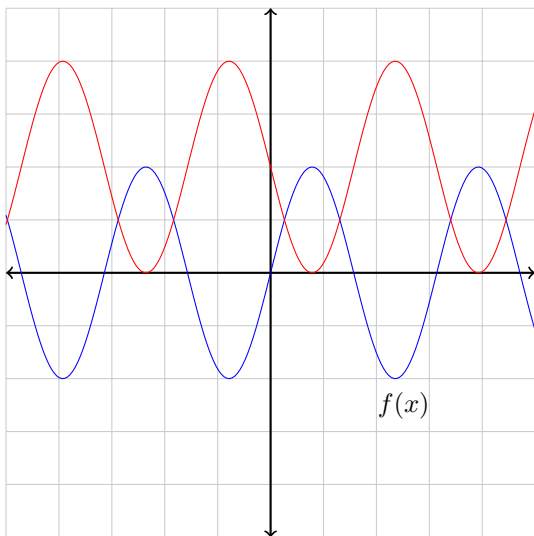(c)

(b)

(d)