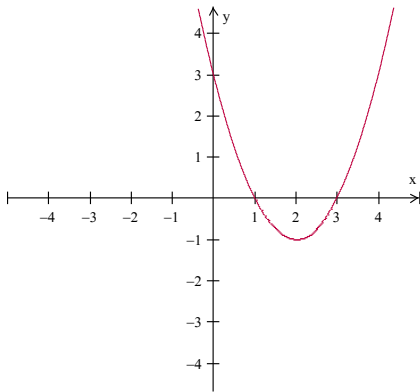


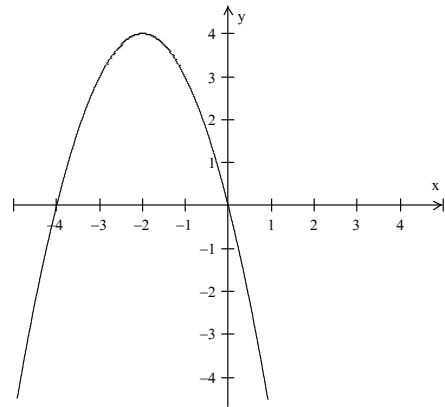
Algebra P4
Practice Test #3

No calculators. Show all work for full credit.

1. Identify (any point should be written as a point!):



vertex:
domain:
range:
zeros:
y-intercept:
axis of symmetry:

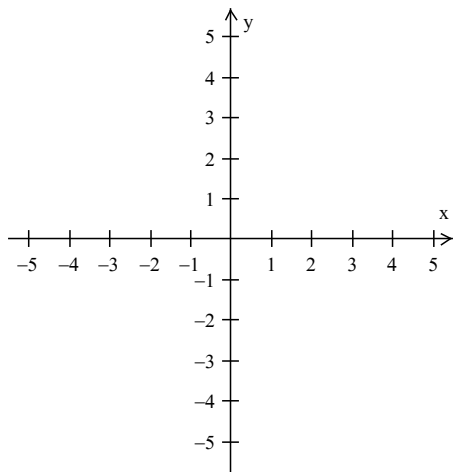


vertex:
domain:
range:
zeros:
y-intercept:
axis of symmetry:

2. Solve the system of equations by graphing

$$y = x^2 + 2x - 3$$

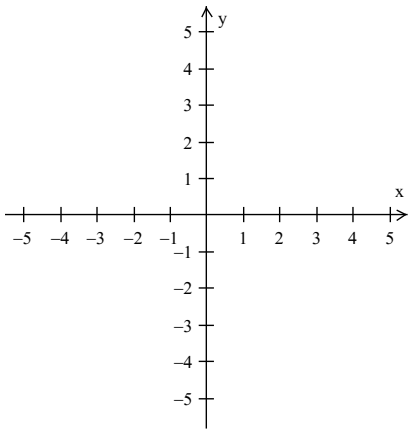
$$y = -x + 1$$



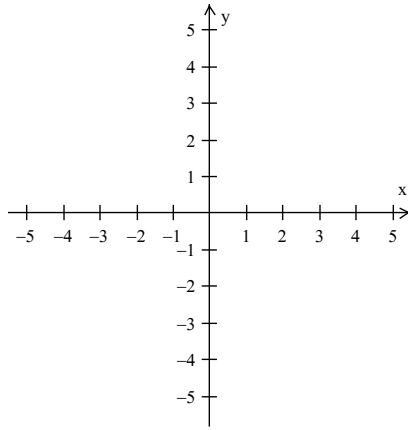
solution(s):

3. A water balloon is thrown up into the air. Its height can be described by the equation $y = x^2 - 6x + 12$, where x is the time in seconds. Find the time when the balloon is highest, and find its height then.

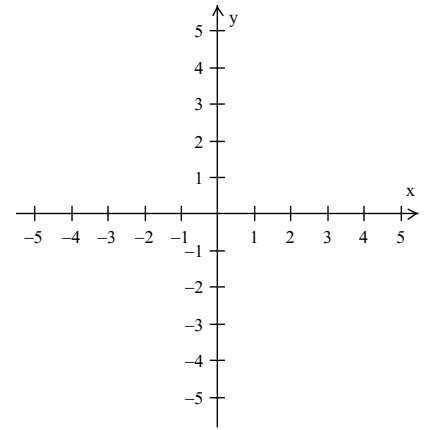
3. Graph each function.



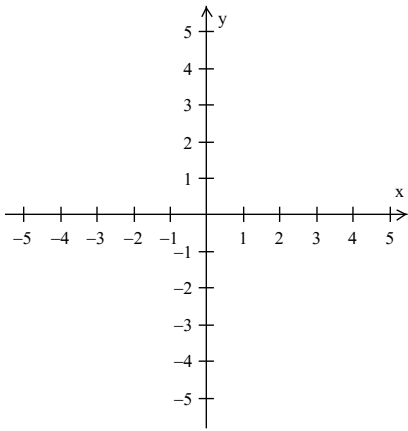
Graph: $y = (x+3)^2$



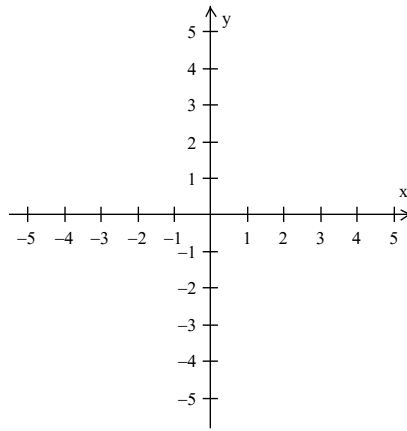
Graph: $y = 2x^2 - 3$



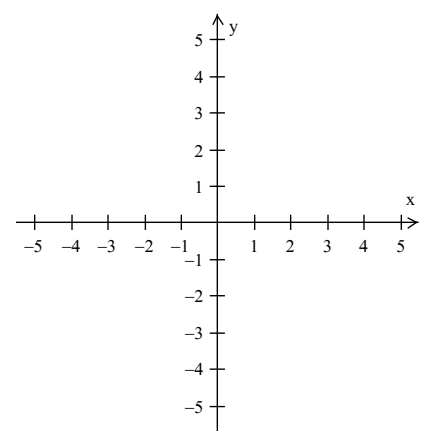
Graph: $y = -4x^2$



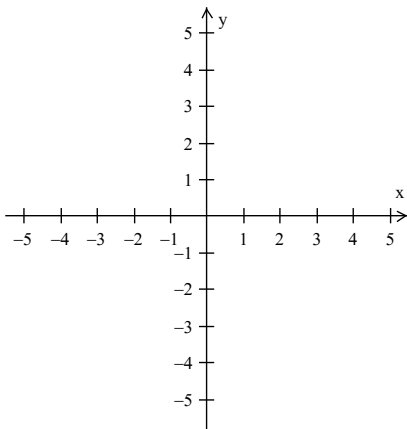
Graph: $y = (x-4)^2 - 2$



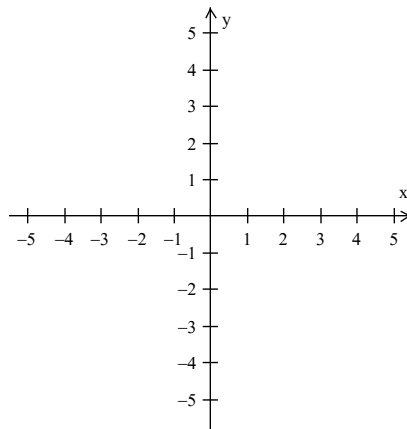
Graph: $y = -x^2 - 3$



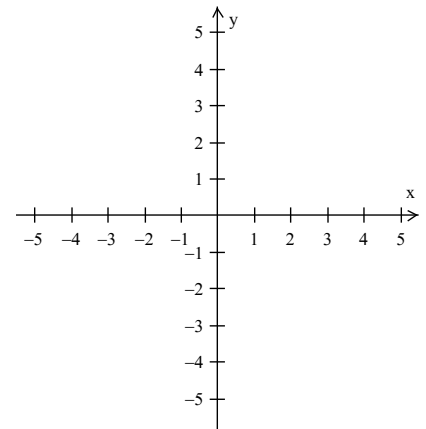
Graph: $y = 2(x+1)^2$



Graph: $y = -|x+4|$



Graph: $y = -4|x|+1$



Graph: $y = 3|x-2|-1$

4. Write the equation for the function described:

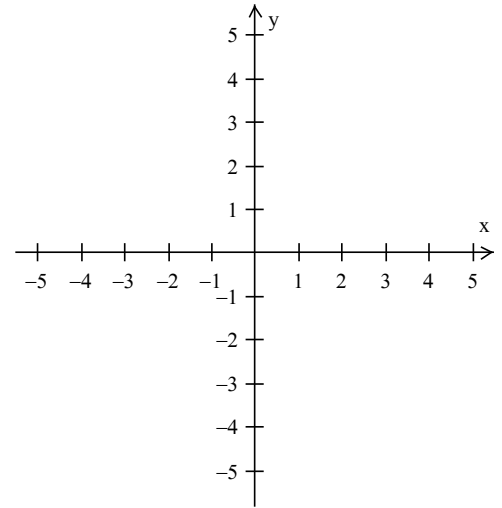
a. Base graph $y = x^2$, moved left 3 and down 5. _____

b. Base graph $y = |x|$, vertical stretch by 3 and up 2. _____

c. Base graph $y = x^3$, flipped upside down and right 1. _____

5. Turn the standard form into vertex form by completing the square, and SHOW WORK. Then graph.

$$y = x^2 - 8x + 13$$



vertex:

6. Find the vertex.

a. $y = x^2 + 4x + 1$

b. $y = 3x^2 + 3x + 1$

7. Find the zeros (x-intercepts). Write them as points.

a. $y = x^2 - 4x$

b. $y = x^2 - 25$

8. Solve for x.

a. $x^2 + 4x - 2 = 0$

b. $2x^2 + 3x = -1$

9. If $f(x) = 3x^2 - 2$ find the following:

a. $f(0)$

b. $f(2)$

c. $f(-3)$