

**Graph the following. Find the indicated values.**

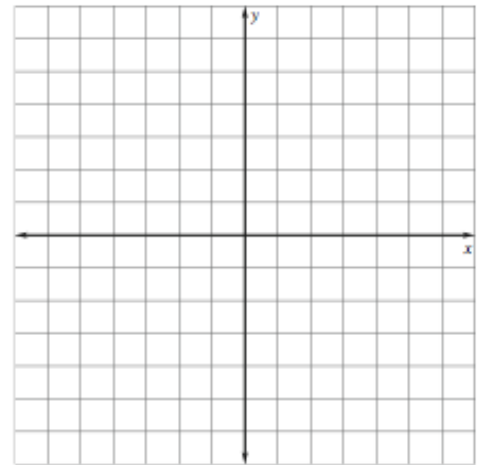
1.  $y = 2(x+2)(x-2)$

Axis of Symmetry: \_\_\_\_\_

Vertex: \_\_\_\_\_

Zero(s): \_\_\_\_\_

Max or Min: \_\_\_\_\_

2.  $x^2 - 4x + 4 - 8y + 16 = 0$

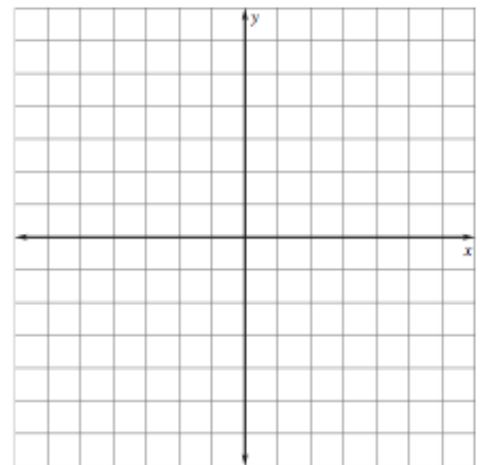
Axis of Symmetry: \_\_\_\_\_

Vertex: \_\_\_\_\_

Directrix: \_\_\_\_\_

Focus: \_\_\_\_\_

x	y

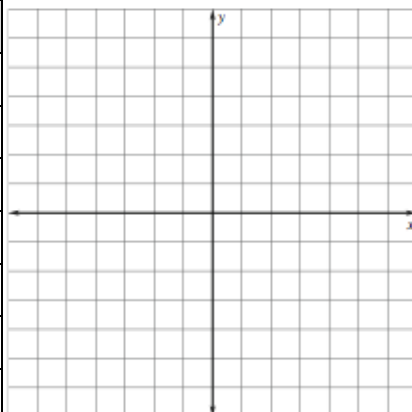


3.  $f(x) = -x^3 - 2x + 3$

End Behavior:

Describe the intervals on which the function is positive and negative:

x	y



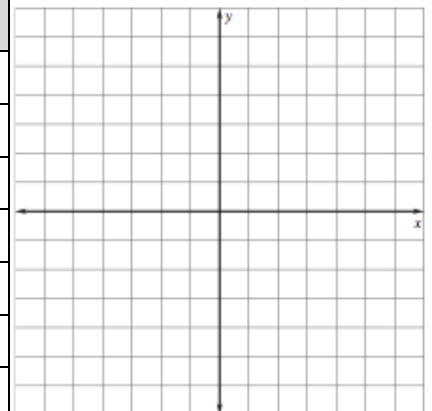
4.  $f(x) = 2\sqrt{x+3}$

Domain:

Range:

Describe the transformation from the parent function:

x	y



**Simplify**

5.  $(3-i)(4+2i)$

6.  $\frac{5}{4+\sqrt{2}}$

**Solve:**

7.  $-2(x-3)^2 = 10$

**Solve the system:**

8. 
$$\begin{aligned} y &= 2x \\ x^2 + y^2 &= 1 \end{aligned}$$

**Factor given one factor:**

9.  $2x^3 - 3x^2 - 23x + 12; (x+3)$

**Factor:**

10.  $3x^2 - 14x - 24$

11. Write the equation of the conic section using the given information:

a) Parabola with vertex (1, 3) and focus (-4, 3)

b) Circle center (4, -5) and radius  $\sqrt{8}$ 

12. Solve:  $(3x+1)^3 = 8$