4.3 Homework

Sketch the graph of each function by using transformations. Name the transformations being made.

1) \( y = -x^2 - 4x - 7 \)  

2) \( y = x^2 - 2x + 2 \)

Identify the following of each function. Then sketch the graph.

3) \( f(x) = x^2 - 8x + 11 \)

4) \( f(x) = -x^2 + 4 \)

- a) Up or down
- b) Vertex
- c) Axis of symmetry
- d) X-intercept
- e) Y-intercept
- f) Domain
- g) Range
- h) Where it's increasing
- i) Where it's decreasing
- j) Max or Min and value
5) \( f(x) = 2x^2 + 8x + 2 \)

   - a) Up or down
   - b) Vertex
   - c) Axis of symmetry
   - d) X-intercept
   - e) Y-intercept
   - f) Domain
   - g) Range
   - h) Where it's increasing
   - i) Where it's decreasing
   - j) Max or Min and value

Determine whether the given quadratic function has a maximum or a minimum value, and then find the value.

6) \( f(x) = 3x^2 - 6x + 4 \)

7) \( f(x) = -2x^2 + 4 \)

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