1. Use interval notation to list the values of $x$ that satisfy the inequality

$$x^2 - 3x + 2 \leq 0$$

**ANSWER:** $[1, 2]$

2. Find the equation of the circle with center $(-2, 3)$ that passes through the point $(2, 0)$.

**ANSWER:** $(x + 2)^2 + (y - 3)^2 = 25$

3. Consider the circle with equation $x^2 + 2x + y^2 - 4y = -4$.
   
   (a) Find the center of the circle. **ANSWER:** $(-1, 2)$
   
   (b) Find the radius of the circle. **ANSWER:** 1

4. Let $f(x) = 4x^2 + 1$. Evaluate $f$ at $(1 - x)$. **ANSWER:** $4x^2 - 8x + 5$

5. Find the domain of $f(x) = \sqrt{3x + 1}$. **ANSWER:** $[-1/3, \infty)$

6. Find the equation of the line that passes through the point $(3, 2)$ and is parallel to the line $y = 2x - 5$. **ANSWER:** $y - 2 = 2x - 6$

7. Let $f(x) = -x^2 + 6x - 8$.
   
   (a) Find the vertex of $f$. **ANSWER:** $(3, 1)$
   
   (b) Find the $y$-intercept and the $x$-intercept.

   **ANSWER:** $(0, -8), (2, 0), (4, 0)$
   
   (c) Sketch the graph.

8. Given a rectangle that has the property that its length is twice its width, describe the area of the rectangle as a function of its width.

**ANSWER:** $f(x) = 2x^2$