1. Evaluate the following \( f(x) = x^2 - 1 \) and \( g(x) = 3x + 5 \). (16 points):

   a. \( f(-3) \)       b. \( g(-2) \)

   c. \( f(0) \)       d. \( g(5) \)
2. Find the x and y intercepts of the following functions: (6 points)

a) \( f(x) = x^2 - 5x + 6 = 0 \)

b) \( h(x) = -2x + 10 \)

3. (6 points) Solve the equation(s).

a) \( 3x^2 = 10 - x \)

b) \( x^2 - 2 = 4x \)
4. Find the center and radius of the circle. Then graph on the coordinate plane below.

\( x^2 + y^2 - 2x + 2y - 4 = 0 \)

5. (10 points) Show that N(-4,2), J(1,4), I(3,-1), T(-2,-3) are vertices of a square.

**Hint:**

\[ d = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2} \]
5. **(6 points)** Given that A(-3,8), find the coordinates of point B such that C(5,-10) is the midpoint of segment AB.

7. **(6 points)** Solve the following equation(s).
   
   a) \( 3 + \sqrt{3x+1} = x \)
   
   b) \( 2|5x + 2| - 1 = 5 \)
8. Solve the inequality $2x^2 - x < 3$, **for full credit you must show some analysis.** (12 points)

9. (7 points) Solve the inequality. Make sure your final answer is in interval notation. **You must show some analysis for full credit.**

$\frac{x+1}{x+3} \leq 2$
10. (8 points)

a) Sketch the graph of the equation. \( y = -x^2 + 2 \)

b) Use test for symmetry to determine if the graph is symmetric with respect to the y-axis, x-axis, origin or no symmetry.
11. Graph the function. \( R(x) = |x + 2| \). (6 points)

a) ____________________________

b) Test the function for symmetry with respect to the x-axis, y-axis and the origin.

b) ____________________________

c) Find the x and y intercepts if they exist

c) ____________________________
12) Solve the following inequalities. Make sure your final answer is in interval notation.

8 points
a) \(2x + 5 < 3x - 7\)

b) \(|3x - 7| \geq 5\)

c) \(3 \leq \frac{2x - 9}{5} < 7\)

d) \(|6x - 5| \leq -2\)