Example

Consider the function \( f(x) = x^3 + x^2 + 1 \).

1. Is the function even, odd, or neither?

   **ANSWER:** Neither.

   \[
   f(-x) = (-x)^3 + (-x)^2 + 1 = -x^3 + x^2 + 1.
   \]
   
   Since \( f(-x) \neq f(x) \) then \( f \) is not even.
   
   Since \( f(-x) \neq -f(x) \) then \( f \) is not odd.

2. \( f(-2) = ? \)

   **ANSWER:** \( f(-2) = (-2)^3 + (-2)^2 + 1 = -8 + 4 + 1 = -3 \)

Consider the function \( f(x) = x^2 - 6 \).

3. Is the function even, odd, or neither?

   **ANSWER:** Even.

   \[
   f(-x) = (-x)^2 - 6 = x^2 - 6 = f(x).
   \]
   
   Since \( f(-x) = f(x) \) then \( f \) is even.

4. \( f(-1) = ? \)

   **ANSWER:** \( f(-1) = (-1)^2 - 6 = 1 - 6 = -5 \)