1. For each function, determine whether it is even or odd.

   (a) \( f(x) = x|x| \) 
   (b) \( g(x) = \frac{1}{x^n} \) 
   (c) \( h(x) = f \ast g \)

2. Find an expression for a quadratic function \( f \) if \( f(0) = 0 \), \( f(1) = -2 \), and \( f(-1) = 8 \).