Sooner Upward Bound Pre-Calculus: Quiz #7

Sections 1.5 and 1.7

Problem 1: Determine whether each function is even, odd, or neither. Show your work.

a. \( f(x) = 2x^3 - 6x^5 \)

b. \( f(x) = x^2\sqrt{1 - x^2} \)

Problem 2: Find the average rate of change of each function from \( x_1 \) to \( x_2 \).

a. \( f(x) = x^2 + 2x \) from \( x_1 = 3 \) to \( x_2 = 5 \)

b. \( f(x) = \sqrt{x} \) from \( x_1 = 4 \) to \( x_2 = 9 \)
Problem 3: Use possible symmetry to determine whether each graph is the graph of an even function, an odd function, or a function that is neither even nor odd. Write either “even”, “odd”, or “neither” below each graph.

Problem 4: Find the given function combination or combined function value. Simplify all answers.

a. If \( f(x) = 2x^2 - 5 \) and \( g(x) = 3x + 7 \), find \((f + g)(4)\):

b. If \( f(x) = 3x - 4 \) and \( g(x) = x + 2 \), find \((f \cdot g)(x)\):

c. If \( f(x) = 6x^2 - x - 1 \) and \( g(x) = x - 1 \), find \((f - g)(x)\):

d. If \( f(x) = 2x^2 - x - 3 \) and \( g(x) = x + 1 \), find \((\frac{f}{g})(x)\):