Problem 1: Write the limit definition of the derivative.

Problem 2: Use the definition of the derivative (i.e. the four step method) to find the derivative of \( f(x) = 3x^2 \). Use your answer to find \( f'(4) \).

Problem 3: Use the derivative rules to find the derivative formula for the following functions:

a. \( y = -3.2x^3 + 6.1x - 5.3 \)

b. \( j(x) = \frac{4x^2 + 19x + 5}{x} \)

c. \( h(x) = 17 - 8\sqrt{x} \)
Problem 4: Draw the corresponding slope graph for the following on the set of axes to the right: