Class Drill 13d: Rate of Change Problem (Square Root Function)

A company manufactures cameras. The weekly cost function is \( C(x) = 6 + \sqrt{4x} + 4 \). In this equation, \( x \) is the number of hundreds of cameras produced per week, and \( C(x) \) is the cost per week, in thousands of dollars.

(A) What is the fixed cost? (exact answer, with units)

(B) What is the cost to produce 3 hundred cameras per week? (exact answer, with units)

(C) What is the marginal cost at a production level of 3 hundred cameras per week? (exact answer, with units)

(D) Use your answers to (B) and (C) to estimate the cost to produce 4 hundred cameras per week. (exact answer, with units)

(E) What is the actual cost of producing 4 hundred cameras per week? (exact answer and a decimal approximation, with units)

(F) A graph of the cost function is shown at below. Illustrate each of the quantities found in questions (A) - (E).