Calculus 12
8-7 Extreme Value Problems in Economics

1. A company determines that the cost, in dollars, of producing x items is
$C(x) = 280{,}000 + 12.5x + 0.07x^2$

a) Find the average cost and marginal cost of producing 1000 items.

b) At what production level will the average cost be least?

c) What is the minimum average cost?

2. The cost, in dollars, for the production of x units of a commodity is
$C(x) = 6400 + \frac{x}{10} + \frac{x^2}{1000}$

a) Find the average cost and marginal cost oat a production level of 3000 units.

b) Find the production level that will minimize the average cost.

c) Find the smallest average cost.