Practice Problem: Minimizing ATC
Managerial Economics
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Show your work as if this were an exam question.

A firm's cost curve is given by the following function where TC is total cost per month and Q is the units produced per month:

$$TC = 500 + 4Q + 0.4Q^2$$

a. Write out an equation for ATC. Simplify your answer as much as possible.

b. Find the monthly production level that will minimize the per-unit cost of production.

c. Verify that you have found the minimum ATC, not the maximum ATC. Briefly explain.

d. At the output level than minimizes ATC, what is the relationship between ATC and marginal cost (MC)?