Practice Problem: Pricing Decisions and Elasticity
Managerial Economics
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Show your work as if this were an exam question.

A firm's demand curve is given as follows: $P = 500 - 2Q$
The firm's total cost function is given as follows: $TC = 6{,}000 + 20Q + 0.2Q^2$

a. Write out the profit function in terms of Q. Simplify your answer as much as possible.

b. Find the values of Q and P that maximize profit.

c. Calculate the price elasticity at the profit-maximizing output level.

d. Calculate MR and MC at the profit-maximizing output level.