

2.5 Short Run Profit Maximization - Practice Problems

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A firm has short-run costs given by:

$$C(q) = q^2 + 1$$

$$MC(q) = 2q$$

1. Write an equation for fixed costs, f .
2. Write an equation for variable costs, $VC(q)$.
3. Write an equation for average fixed costs, $AFC(q)$.
4. Write an equation for average variable costs, $AVC(q)$.
5. Write an equation for average (total) costs, $AC(q)$.
6. Suppose the firm is in a competitive market, and the current market price is \$4, how many units of output maximize profits?
7. How much profit will this firm earn?
8. At what market price would the firm break even ($\pi = 0$)?
9. Below what market price would the firm shut down in the short run if it were earning losses?
10. Write out the firm's short run supply function.