

## 2.5 — Short Run Profit Maximization — Practice Problems

ECON 306 - Spring 2021

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.