

EXERCISES CHAPTER 15

Exercise 1. Suppose a firm has a cost function $c(y) = y$. Thus, marginal cost is constant at 1. Suppose demand is $y = \frac{100}{p^2}$.

- (a) What is the inverse demand?
- (b) What is the monopolist's profit function?
- (c) Find the optimal output y .
- (d) What price does the firm charge?
- (e) What is the market price elasticity of demand at the profit maximizing output?

Exercise 2. Suppose demand is $\frac{500}{p-10}$ and a monopolist has cost function $c(y) = y^2$.

- (a) What is the inverse demand?
- (b) Set up the firm's profit function.
- (c) What quantity does the monopolist produce?
- (d) How much does the monopolist charge?
- (e) What is its profit?

Exercise 3. Suppose demand is $500 - p$ and a monopolist has cost function $c(y) = 100y$.

- (a) What is the firm's profit function?
- (b) What is the firm's optimal output y ?
- (c) What price do they charge?
- (d) What is the consumer surplus?
- (e) What is the producer surplus?
- (f) What is the dead-weight loss?

Exercise 4. Suppose demand is $40 - 2p$ and a monopolist has cost function $c(y) = 5y$.

- (a) What is the firm's profit function?
- (b) What is the firm's optimal output y ?
- (c) What price do they charge?
- (d) What is the consumer surplus?
- (e) What is the producer surplus?
- (f) What is the dead-weight loss?