

1. A commodity q is supplied by a monopolist with cost function:

$$c(q) = 32 + 4q + q^2$$

The monopolist faces a market demand curve given by:

$$Q_d = 14 - \frac{1}{2}p$$

Find the profit maximizing price and quantity. What is the maximum profit?

2. A commodity q is supplied by a monopolist with cost function:

$$c(q) = 22 + 8q$$

A representative consumer with income $Y = 400$ has a utility function over numeraire consumption c and commodity q given by:

$$u(c, q) = c + 24q - q^2$$

- Write down the demand curve faced by the monopolist.
 - Find the profit maximizing price and quantity. Calculate firm profit and consumer utility at this point.
 - What is the efficient quantity? Calculate price, firm profit, and consumer utility at the efficient quantity.
 - What is the deadweight loss caused by the monopoly?
-