

Economic Examples

Functions: Cost, Revenue, Profit

What do we want to maximize?

What do we want to minimize?

Example: Suppose that we sell toy trucks at a store for $\$p$. The quantity that we sell in a week, q , depends on the price and is given by the demand function:

$$q = D(p) = 60 - 3p$$

What should we charge to maximize our revenue?

What about maximizing Profit?

To do this, we need to know our Cost function.

Suppose that our store buys the toy trucks from the manufacturer for \$6 each.

$$C(q) = 6q =$$

$$\text{Profit: } P = R - C$$

Remark: The price to maximize Profit is typically different than the price to maximize Revenue.

Minimize *average cost*

$$\text{Average Cost} = a(q) =$$

Example: Suppose that the cost to produce q widgets is:

$$C(q) = .001q^3 - 1.2q^2 + 3q$$

What is the minimum average cost?