

4.4c Modeling and Optimization

Examples from Economics

Maximum Profit: If there is a maximum profit, it occurs when
marginal revenue = marginal cost

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Suppose $r(x) = 9x$ and $c(x) = x^3 - 6x^2 + 15x$, where x represents
1000's of units. Is there a production level that maximizes profit? If so,
what is it?

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$$\text{average cost} = \frac{c(x)}{x}$$

Minimum Average Cost: If there is a minimum average cost, it occurs when average cost = marginal cost.

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Suppose $c(x) = x^3 - 6x^2 + 15x$, where x represents 1000's of units. Is there a production level that minimizes average cost? If so, what is it?

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