

FORMULA SHEET

MICROECONOMICS

Allocative Efficiency Condition

$P = MC$, or more precisely,
Marginal Social Benefit (MSB) = Marginal Social Cost (MSC)

Autonomous Spending Multiplier

$$\text{Multiplier} = \frac{1}{1 - \text{MPC}} = \frac{1}{\text{MPS}}$$

Average Fixed Cost

$$\text{AFC} = \frac{\text{Total Fixed Cost (TFC)}}{\text{Quantity of Output (Q)}}$$

Average Product

$$\text{AP} = \frac{\text{Total Product}}{\text{Quantity of Input}}$$

Average Profit

$$\text{Average Profit} = \frac{\text{Total Profit}}{\text{Quantity}}$$

Average Revenue

$$\text{Average Revenue} = \frac{\text{Total Revenue}}{\text{Quantity}}$$

Average Total Cost

$$\text{ATC} = \frac{\text{Total Cost (TC)}}{\text{Quantity of Output (Q)}}$$

Average Variable Cost

$$\text{AVC} = \frac{\text{Total Variable Cost (TVC)}}{\text{Quantity of Output (Q)}}$$

Cross-Price Elasticity of Demand

$$\frac{\text{Percentage Change in Quality Demanded of Good X}}{\text{Percentage Change in Price of Good Y}}$$

Distributive Efficiency Condition

$$\frac{\text{MU}_F}{P_F} = \frac{\text{MU}_C}{P_C}$$

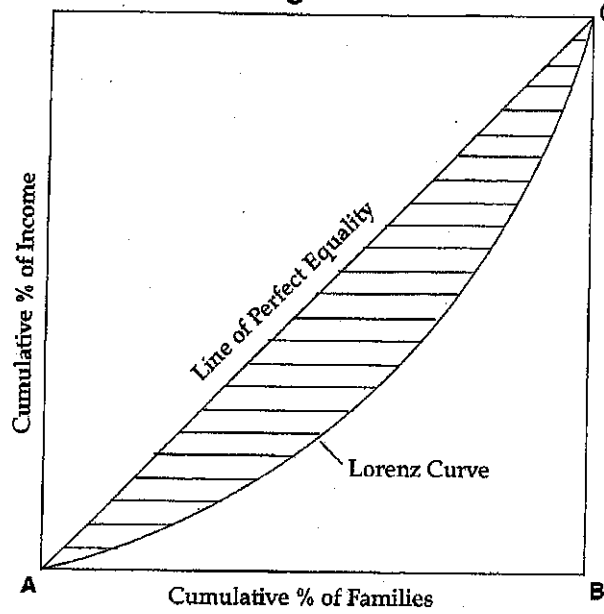
Elasticity of Supply

$$\frac{\text{Percentage Change in Quantity Supplied}}{\text{Percentage Change in Price}}$$

(Use the point or arc formula as indicated below for the price elasticity of demand, substituting the quantity supplied for the quantity demanded.)

Gini Coefficient

Figure 52



$$\frac{\text{shaded area}}{\text{area of triangle ABC}}$$

Lerner Index of Monopoly Power

$$LPI = \frac{\text{Price} - \text{Marginal Cost}}{\text{Price}}$$

Marginal Cost

$$MC = \frac{\Delta TC}{\Delta Q} = \frac{\Delta TVC}{\Delta Q}$$

Marginal Product of Labor

$$MP_L = \frac{\Delta TP}{\Delta L}$$

Marginal Revenue

$$MR = \frac{\Delta TR}{\Delta Q}$$

Marginal Revenue Product of Labor (MRP_L)

$$MRP_L = MP_L \times MR_{\text{output}}$$

Price Elasticity of Demand

Simple "Point" Formula:

$$\frac{\% \Delta Q_d}{\% \Delta P} = \frac{\frac{\Delta Q_d}{Q}}{\frac{\Delta P}{P}} = \frac{\frac{Q_{\text{new}} - Q_{\text{old}}}{Q}}{\frac{P_{\text{new}} - P_{\text{old}}}{P_{\text{old}}}}$$

More Precise "Arc" Formula:

$$\frac{\frac{Q_{\text{new}} - Q_{\text{old}}}{\left(\frac{Q_{\text{new}} + Q_{\text{old}}}{2}\right)}}{\frac{P_{\text{new}} - P_{\text{old}}}{\left(\frac{P_{\text{new}} + P_{\text{old}}}{2}\right)}}$$

Price for a Competitive Firm

$$P = MR = AR$$

Production Efficiency Condition

$$\frac{w}{r} = \frac{MR_L}{MP_K}$$

Profit

$$\text{Profit} = TR - TC$$

Profit-Maximizing Output Level (if output should be produced at all), rule for finding

$$MR = MC$$

Slope

$$\frac{\text{Rise}}{\text{Run}}$$

Slope of the Total Product Curve

$$\frac{\text{Rise}}{\text{Run}} = \frac{\text{Change in Total Product}}{\text{Change in the Number of Units of an Input}} = \text{Marginal Product}$$

Total Costs

$$\text{Total Costs} = \text{Total Fixed Costs} + \text{Total Variable Costs}, TC = TFC + TVC$$

Value of the Marginal Product of Labor (VMP_L)

$$VMP_L = MP_L \times P_{\text{output}}$$