

Math Review

Symbols and definitions:

Δ - change

% - percent

% Δ - percentage change

P - price

Q - quantity

Formulas:

$$\textcircled{1} \text{ Slope} = \frac{\Delta P}{\Delta Q} = \frac{\text{rise}}{\text{run}}$$

$$\textcircled{2} \text{ Percentage change } (\% \Delta) = \frac{\text{Final value} - \text{Initial value}}{\text{Initial value}}$$

eg $Q_1 = 10$ (initial value) $\% \Delta = \frac{15 - 10}{10} = 0.5$
 $Q_2 = 15$ (final value)

$$\textcircled{3} \text{ Average} = \frac{Q_1 + Q_2}{2} \quad \text{Average} = \frac{10 + 15}{2} = 12.5$$

$$\textcircled{4} \text{ Area of a rectangle} = \text{Height} * \text{Base}$$

$$\textcircled{5} \text{ Percentage change } (\% \Delta) = \frac{\text{Final value} - \text{Initial value}}{\text{Average}} = \frac{Q_2 - Q_1}{\frac{Q_1 + Q_2}{2}}$$

Elasticity - measures how one economic variable (eg. Q_0) responds to changes in another economic variable (eg. P), based on percentage change in variables.

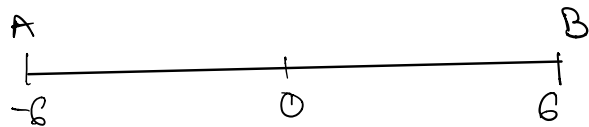
$$\text{Price elasticity of demand} = \frac{Q_2 - Q_1}{\frac{Q_1 + Q_2}{2}} \div \frac{P_2 - P_1}{\frac{P_2 + P_1}{2}} = \frac{Q_2 - Q_1}{\text{Avg.}} \div \frac{P_2 - P_1}{\text{Avg.}} = \frac{\% \Delta Q}{\% \Delta P}$$

⑥ Absolute value $|x|$

- the magnitude of a real number regardless of its sign.

- how far a number is from 0.

eg Absolute value of $|-6|$ is 6



$$|-6| = 6$$

$$|6| = 6$$

Both points (A, B) are 6 units away from 0.

Infimite (∞) - without an end

eg: $\{0, 1, 2, 3, 4, \dots\}$