

Elasticity of substitution - arc elasticity

$$= \frac{\% \Delta \text{ in Quantity Demand Ratio}}{\% \Delta \text{ in Price Ratio}}$$

	old		New	
	P	Q	P	Q
vanaspali ghce	8	6	8	8
ghce Pure	16	4	24	3

① Calculation of Quantity Demand Ratio

$$\text{old Q Ratio} \Rightarrow \frac{6}{4} = 1.5$$

$$\text{New Q Ratio} = \frac{8}{3} = 2.67$$

% Δ in Quantity Demand Ratio

$$\Rightarrow \frac{2.67 - 1.5}{1.5} = 0.78$$

② Calculations of Percentage change in Price Ratio

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~~Reason~~ old Price Ratio

$$= \frac{8}{16} = .5$$

New Price Ratio

$$= \frac{8}{24} = .333.$$

Percentage change in Price Ratio

$$\% \text{ ~~change~~ } = \frac{\text{New} - \text{old}}{\text{old}}$$

$$= \frac{.333 - .5}{.5} = .34.$$

Calculation of elasticity of substitution

$$= \frac{\% \Delta \text{ in Quantity Demanded Ratio}}{\% \Delta \text{ in Price Ratio}}$$

$$= \frac{.78}{.34} = 2.29 \text{ approx}$$

$$= \frac{7}{3}$$