

Answer on Question#38627 - Economics - Economics of Enterprise

a. $Q=100 - 4P$ and $P=\$20$

$$Q = 100 - 4 \cdot 20 = 20$$

Point Price Elasticity of Demand is given by the formula $E_d = (P/Q)(\Delta Q/\Delta P)$

$\Delta Q/\Delta P$ is a derivative of the demand function, so it equals -4 .

$$E_d = 20/20 \cdot (-4) = -4, \text{ so the demand is elastic.}$$

b. $Q=1500 - 20P$ and $P=\$5$

$$Q = 1500 - 20 \cdot 5 = 1400$$

$$\Delta Q/\Delta P = -20$$

$$E_d = 5/1400 \cdot (-20) = -1/14, \text{ so the demand is inelastic.}$$

c. $P=50 - 0.1Q$ and $P=\$20$

$$20 = 50 - 0.1Q,$$

$$Q = 300$$

$$Q = 500 - 10P, \text{ so } \Delta Q/\Delta P = -10$$

$$E_d = 20/300 \cdot (-10) = -2/3, \text{ so the demand is inelastic.}$$