Name Answers

Calculating Elasticity

PRICE ELASTICITY OF DEMAND = $\frac{\text{percentage change in Q demand}}{\text{percentage change in price}}$

PERCENTAGE CHANGE= $\frac{\text{Original Number-New Number}}{\text{Original Number}}$ **X 100**

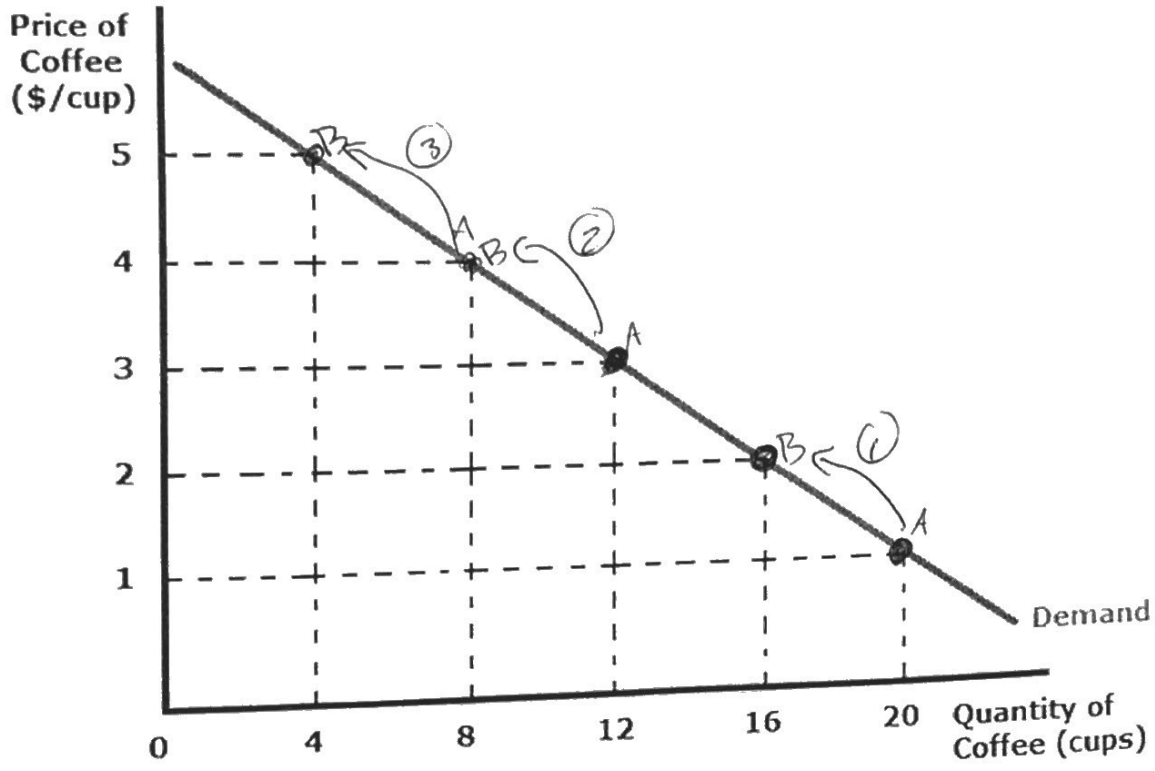
Use the formula above to calculate values of Price Elasticity, percentage changes, and data points for all the situations below:

Price		Quantity		% change in quantity demanded	% change in price	Elasticity of Demand	
Initial	*New*	*Initial*	*New*				
25	30	100	40	-60%	20%	1. 3	E
40	70	120	90	-25%	75%	2. .33	I
200	220	80	64	-20%	10%	3. 2	E
50	75	150	135	-10%	50%	4. .2	I
200	280	125	100	-20%	40%	5. .5	I
50*	60*	10*	7*	-30	20	6. 1.5	E
10*	11*	4*	3*	-25	10	7. 2.5	E
20*	4*	20*	22*	10	-80	8. .125	I
2	4	10	3	-70	100	9. .7	I
400*	560*	8*	4*	-50	40	10. 1.25	E

*= Potential answer, though there are other answers that could be correct.

List 5 goods that you believe have an elastic demand:

List 5 goods that you believe have an inelastic demand



1) In the graph above what is the price elasticity of demand when there is a price increase from \$1 to \$2?
Show all work.

$$\frac{\frac{Q_2 - Q_1}{Q_1}}{\frac{P_2 - P_1}{P_1}} = \frac{\frac{16-20}{20}}{\frac{2-1}{1}} = \frac{\frac{4}{20}}{\frac{1}{1}} = \frac{.2}{1} = \boxed{.2}$$

2) In the graph above what is the price elasticity of demand when there is a price increase from \$3 to \$4?
Show all work.

$$\frac{\frac{Q_2 - Q_1}{Q_1}}{\frac{P_2 - P_1}{P_1}} = \frac{\frac{8-12}{12}}{\frac{4-3}{3}} = \frac{\frac{4}{12}}{\frac{1}{3}} = \frac{\frac{1}{3}}{\frac{1}{3}} = \boxed{1}$$

3) In the graph above what is the price elasticity of demand when there is a price increase from \$4 to \$5?
Show all work.

$$\frac{\frac{Q_2 - Q_1}{Q_1}}{\frac{P_2 - P_1}{P_1}} = \frac{\frac{4-8}{8}}{\frac{5-4}{4}} = \frac{\frac{4}{8}}{\frac{1}{4}} = \frac{.5}{.25} = \boxed{2}$$

① $\frac{\frac{40-100}{100}}{\frac{30-25}{25}} = \frac{-60\%}{20\%} = \boxed{3}$

② $\frac{\frac{90-120}{120}}{\frac{70-40}{40}} = \frac{\frac{-30}{120}}{\frac{30}{40}} \quad \frac{-25\%}{75\%} = \boxed{.33}$

③ $\frac{\frac{64-80}{80}}{\frac{220-200}{200}} = \frac{\frac{-16}{80}}{\frac{20}{200}} = \frac{-20\%}{10\%} = \boxed{2}$

④ $\frac{\frac{135-150}{150}}{\frac{75-50}{50}} = \frac{\frac{-15}{150}}{\frac{25}{50}} = \frac{-10\%}{50\%} =$

⑤ $\frac{\frac{100-125}{125}}{\frac{280-200}{200}} = \frac{\frac{-25}{125}}{\frac{80}{200}} \quad \frac{-20\%}{40\%} = \boxed{.5}$

⑥ $30/20 = 1.5$

⑦ $25/10 = 2.5$

⑧ $10/80 = .125$

⑨ $70/100 = .7$

⑩ ① $\frac{X}{40} = 1.25$ ② $(40)\frac{X}{40} = 1.25(40)$

$\boxed{X = 50}$