

Solution Key: Homework for Chapter 4

1)

Price	Quantity	Total Revenue
5	25	125
10	20	200
15	15	225
20	10	200
25	5	125

- a) Total revenue increases to \$225 from \$125. Total increase is \$100
- b) Total revenue drops to \$125 from \$225. Total drop is \$100
- c) @ P=15 and Q=15; total revenue is maximized
- d) Elastic because as the price increases total revenue drops.

2)

P	Q	Price Elasticity	Total Revenue
10	2	~	20
9	3	3.80	27
8	4	2.43	32
7	5	1.66	35
6	6	1.18	36
5	7	0.85	35
4	8	0.60	32
3	9	0.41	27
2	10	0.26	20

3)

- a) Own Price Elasticity = $((200/700) / ($10/$35)) = 0.286 / 0.286 = 1$
- b) If Average Price is 20 cents then the price either increased from \$10 to \$30 or vice versa. Therefore the elasticity is calculated as:

$$\text{Own Price Elasticity} = ((400/400) / (20/20)) = 1$$

4) Income elasticity is 0.62 and if we use this in our elasticity formula:

$$0.62 = 30\% / \% \text{change in Income}$$

$$\% \text{change in Income} = 0.484$$

$$20,000 \times 0.484 = \$9,680$$

$$40,000 \times 0.484 = \$19,360$$