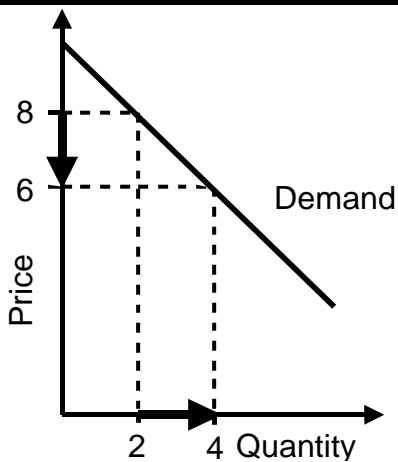
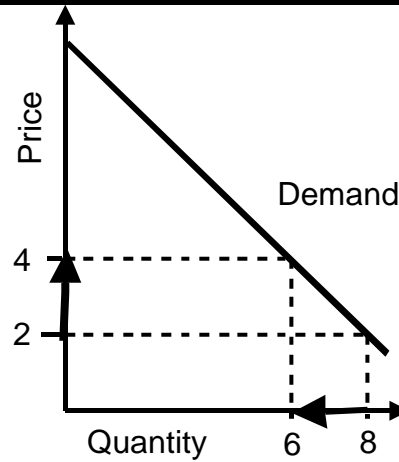
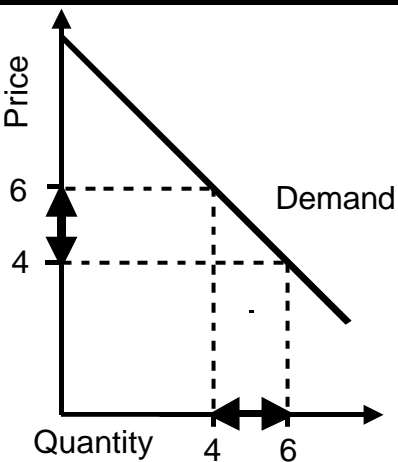


# Price Elasticity of Demand

## 1 Formula

- **Price elasticity of demand (e)** =  $\frac{\% \text{ change in quantity demanded}}{\% \text{ change in price}}$
- This elasticity **shows** how quantity demanded and total revenue are affected by changes in price. Question: Should prices be increased or decreased in order to maximize total revenue?
- **Absolute** values are used although the price elasticity of demand is actually negative if the demand curve is downward sloping.
- Demand is **elastic**, if  $e > 1$ , and **inelastic**, if  $e < 1$ .

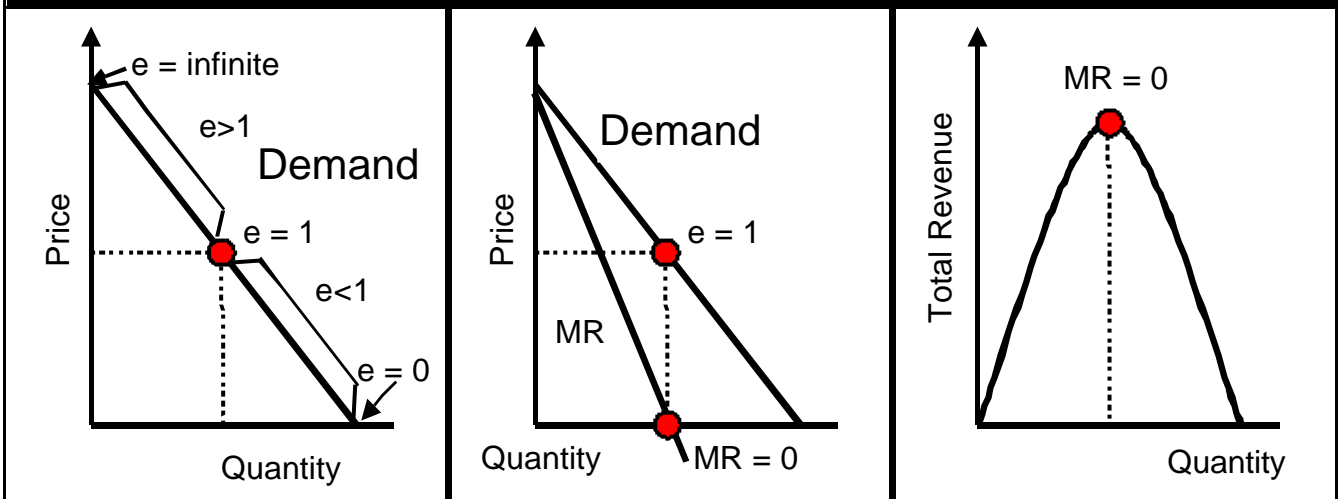
## 2 Elasticity and total revenue

elastic demand ( $e > 1$ )	inelastic demand ( $e < 1$ )	unit elastic demand ( $e = 1$ )
 <p><math>e = \frac{2/3}{2/7} = 2.33</math> (3 and 7 are midpoints)</p> <p><b>Total revenue (= P * Q):</b> Price 8: <math>8 * 2 = 16</math> Price 6: <math>6 * 4 = 24</math></p> <p>➔ A <b>lower</b> price results in a <b>higher</b> total revenue.</p>	 <p><math>e = \frac{2/7}{2/3} = 0.43</math> (7 and 3 are midpoints)</p> <p><b>Total revenue (= P * Q):</b> Price 2: <math>2 * 8 = 16</math> Price 4: <math>4 * 6 = 24</math></p> <p>➔ A <b>higher</b> price results in a <b>higher</b> total revenue.</p>	 <p><math>e = \frac{2/5}{2/5} = 1</math> (5 and 5 are midpoints)</p> <p><b>Total revenue (= P * Q):</b> Price 4: <math>4 * 6 = 24</math> Price 6: <math>6 * 4 = 24</math></p> <p>➔ A change in price does <b>not affect</b> total revenue.</p>

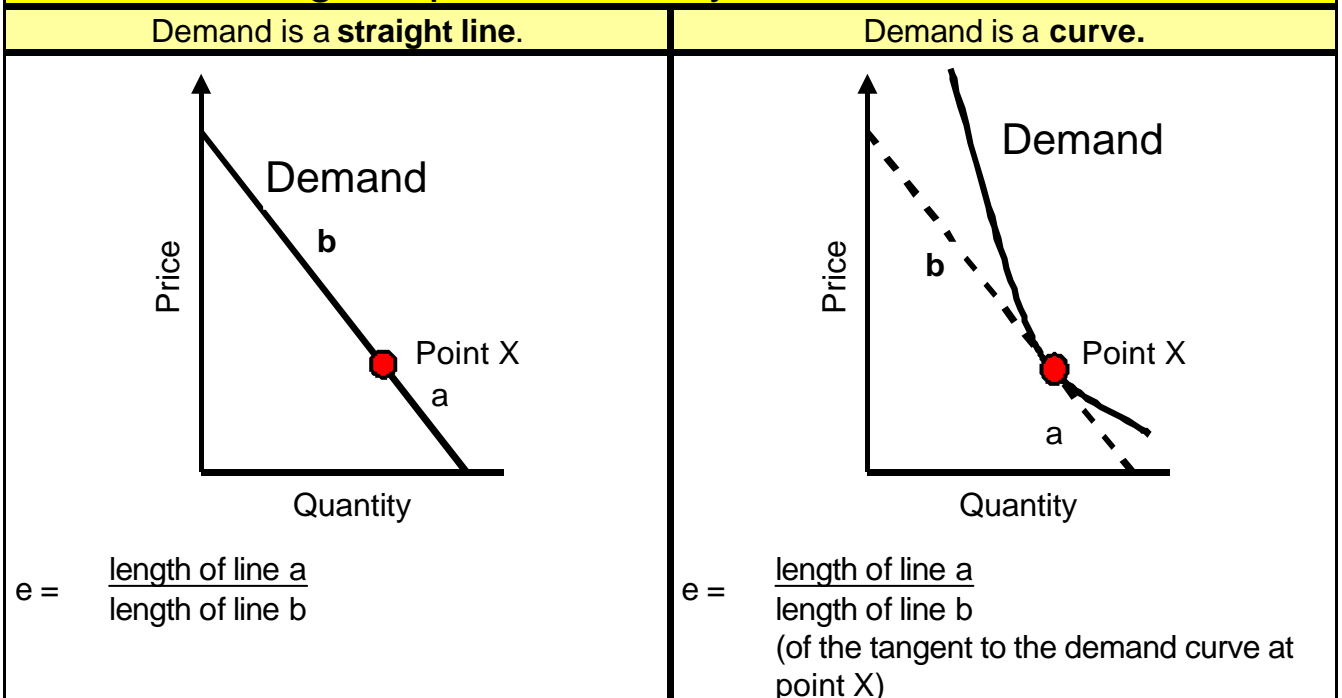
### 3 Effect of changes in price on total revenue (TR)

	Price Elasticity of Demand		
	$e > 1$	$e < 1$	$e = 1$
Price <b>increase</b>	TR falls	TR rises	TR unchanged
Price <b>decrease</b>	TR rises	TR falls	TR unchanged

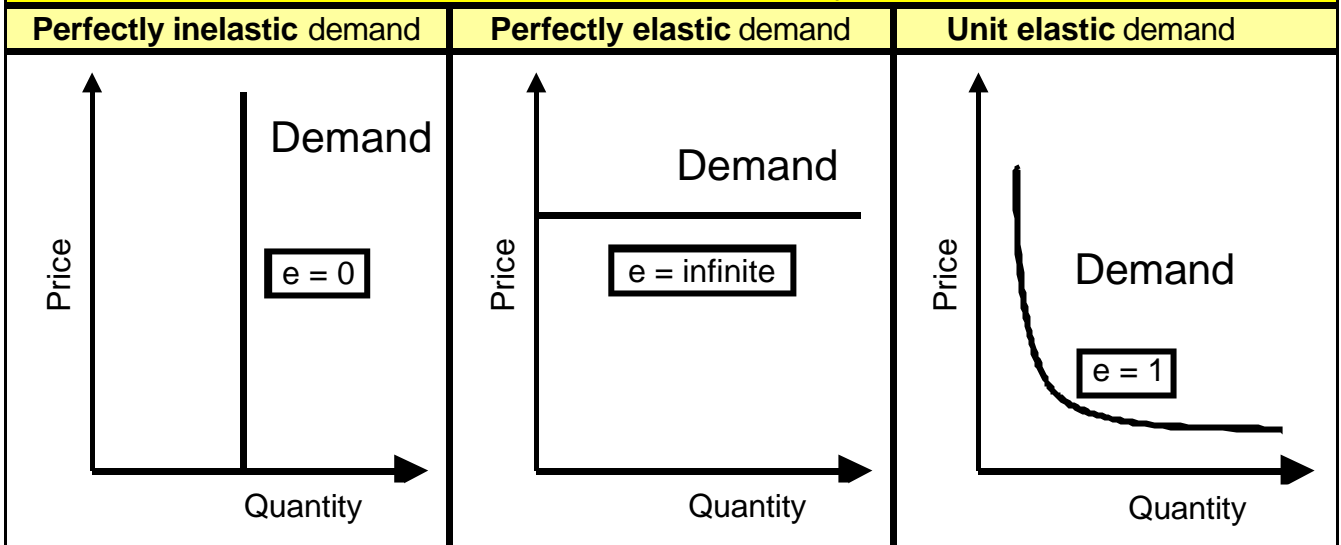
### 4 Elasticity, demand curve, marginal revenue (MR) and total revenue (TR)



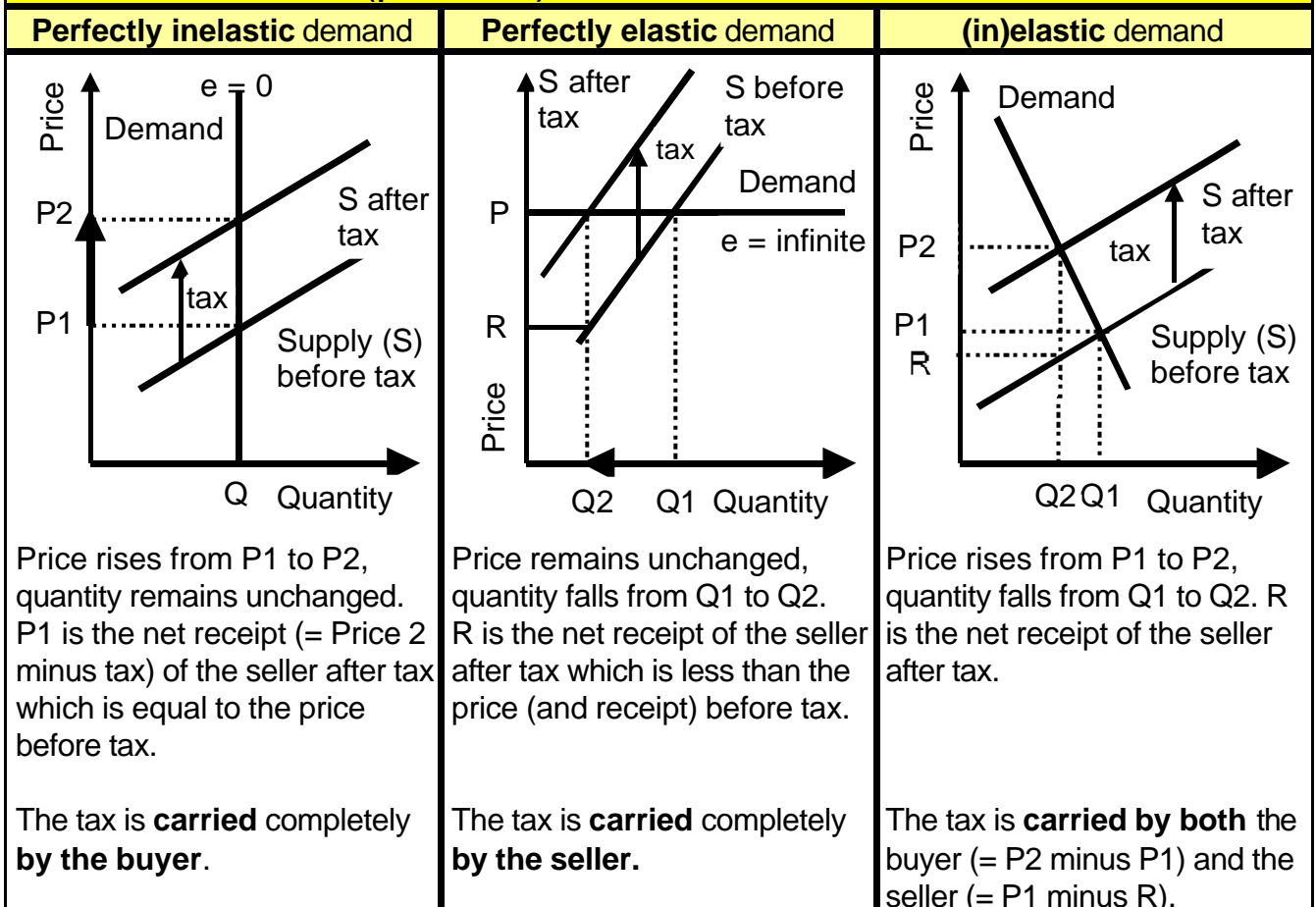
### 5 Measuring the price elasticity of demand



## 6 Special cases of constant elasticity



## 7 Effects of a (per unit) tax



Link to Youtube videos on "Price Elasticity of Demand, part 1 and 2". [Click here](#).