



$$\bar{\pi} = D = AC$$

$$\bar{\pi} = \pi \text{ at } MR = 0$$

$$\bar{\pi} = MR = MC$$

2. a) $a - bQ = c + eQ$

$$Q = \frac{a-c}{2b+e}$$

$$P = a - b \left[\frac{a-c}{2b+e} \right]$$

b) $Q = \frac{a-c}{2b+e}$

$$P = \frac{ab + ae + bc}{2b + e}$$

c) $e \geq 0$

$$P = \frac{ab + ae + bc}{2b + e}$$

3. A) $MR = MC$

$$TC = 100x - 2x^2 \Rightarrow 120 > 0$$

$$120 - 2Q = 4Q$$

$$Q = \frac{120}{3} = 40 \quad MC = 4Q = 80$$

$$Q = 20 \Rightarrow P = 100$$

$$\text{markup} = \frac{(100-80)}{80} = 0.25$$

B) $20 \times \frac{4}{2} = 40$

C) $P = MC \quad 120 - Q = 4Q \quad Q = 24 \quad P = 96$

$$96 \times 24 - 2 \times 24^2 = 1152 \quad MC \text{ is at } 96$$

D) $P = AC$

$$120 - Q = 24 \quad Q = 40$$

$$1440 - 800 = 640$$

$$TC = 80 \times 40 - 2 \times 40^2 = 0$$

$$(120 - 80) \times \frac{40}{2} = 800$$