

plus:

$$Pf = 10 - Qf$$

$$\rightarrow MC = 20 \cdot TR_p = Pf \times Qf$$

$$Pa = 40 - 0.5 Qd$$

$$= 10 Qf - Qf^2$$

$$TC = 10 + 20 Q$$

$$Pf \left(1 - \frac{1}{\epsilon_f}\right) = Pd \left(1 - \frac{1}{\epsilon_d}\right)$$

$$Qf = 40$$

$$Pf = 60$$

$$\rightarrow \epsilon_f = -3, \epsilon_d = -1.5$$

$$TR_d = Pd \times Qd = 40 Qd - 0.5 Qd^2$$

$$\rightarrow Qd = 20 \cdot Pd = 30 \quad TC = TR - TC$$