

ES. 1

(a)

$$Q = 4 L^{1/4} K^{3/4}$$

$$\text{Prod M. L} = \cancel{4} \cdot \frac{1}{\cancel{4}} \frac{K^{3/4}}{L^{3/4}}$$

$$\text{STS} = - \frac{K^{3/4}}{L^{3/4}} \cdot \frac{3 L^{1/4}}{K^{1/4}}$$

$$\text{Prod M K} = \cancel{4} \cdot \frac{3}{\cancel{4}} \frac{L^{1/4}}{K^{1/4}}$$

$$\begin{cases} + \frac{1}{3} \frac{K}{L} = + \frac{W}{r} \\ 4 L^{1/4} K^{3/4} = Q \end{cases} \Rightarrow K = \frac{3 L W}{r}$$

$$\frac{4 L^{1/4} 3^{3/4} L^{3/4} W^{3/4}}{r^{3/4}} = 4 \cdot 3^{3/4} \cdot L \cdot \frac{W^{3/4}}{r^{3/4}} = Q$$

$$L = \frac{Q}{4} \left[\frac{r}{3W} \right]^{3/4}$$

$$K = \frac{3Q}{4} \left[\frac{r}{3W} \right]^{3/4} \cdot \frac{W^{1/4}}{r^{1/4}} = \frac{3^{1/4}}{4} Q \left[\frac{W}{r} \right]^{1/4}$$

$$K = \frac{Q}{4} \left[\frac{3W}{r} \right]^{1/4}$$

(b) $TC \quad w \cdot L + r \cdot K$

$$w \cdot \frac{q}{4} \left[\frac{r}{3w} \right]^{3/4} + r \frac{q}{4} \left[\frac{3w}{r} \right]^{1/4}$$

$$\frac{q}{4} \left[\frac{w \cdot r^{3/4}}{w^{3/4} 3^{3/4}} + \frac{r \cdot 3^{1/4} \cdot w^{1/4}}{r^{1/4}} \right] =$$

$$\frac{q}{4} \left[\frac{w^{1/4} r^{3/4}}{3^{3/4}} + r^{3/4} \cdot w^{1/4} \cdot 3 \right]$$

$$\frac{q}{4} \cdot (w^{1/4} r^{3/4}) \left(\frac{4}{3^{3/4}} \right) = \frac{q}{\sqrt[4]{3^3}} \cdot (w^{1/4} r^{3/4})$$

$$TC = \frac{q \cdot w^{1/4} r^{3/4}}{3^{3/4}}$$

hp

$$w = 16$$

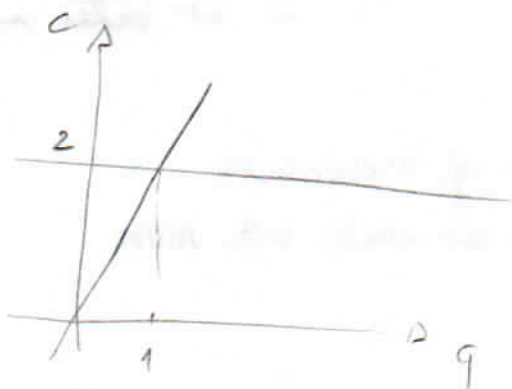
$$r = 3$$

$$TC = q \cdot 2$$

$$AC = MC = 2$$

$$AC = \frac{w^{1/4} r^{3/4}}{3^{3/4}}$$

$$MC = \frac{w^{1/4} \cdot r^{3/4}}{3^{3/4}}$$



$$Q = 8 L^{1/4} K^{3/4}$$

②

$$\text{Prod. M L} = 8 \frac{1}{4} \frac{K^{3/4}}{L^{3/4}} = 2 \frac{K^{3/4}}{L^{3/4}}$$

$$\text{Prod. M K} = 2 \cdot \frac{3}{4} \frac{L^{1/4}}{K^{1/4}} = 6 \frac{L^{1/4}}{K^{1/4}}$$

$$\text{STS} = - \frac{2 \frac{K^{3/4}}{L^{3/4}}}{6 \frac{L^{1/4}}{K^{1/4}}} = - \frac{1}{3} \frac{K}{L}$$

$$+ \frac{1}{3} \frac{K}{L} = + \frac{w}{r}$$

$$\left\{ \begin{array}{l} K = \frac{3wL}{r} \\ 8 L^{1/4} K^{3/4} = 9 \end{array} \right.$$

$$\frac{8 L^{1/4} \cdot 3^{3/4} \cdot w^{3/4} \cdot L^{3/4}}{r^{3/4}} = 8 \cdot 3^{3/4} \cdot L \frac{w^{3/4}}{r^{3/4}} = 9$$

$$\boxed{L = \frac{9}{8} \left[\frac{r}{3w} \right]^{3/4}}$$

$$K = \frac{3w}{r} \cdot \frac{9}{8} \left[\frac{r}{3w} \right]^{3/4}$$

$$\boxed{K = \frac{9}{8} \left[\frac{3w}{r} \right]^{1/4}}$$

$$\begin{aligned} w \cdot \frac{9}{8} \left[\frac{r}{3w} \right]^{3/4} + r \cdot \frac{9}{8} \left[\frac{3w}{r} \right]^{1/4} &= \\ \frac{9}{8} \left[\frac{w^{1/4} r^{3/4}}{3^{3/4}} + r^{3/4} \cdot w^{1/4} \cdot 3^{1/4} \right] &= \\ \frac{9}{8} \left[\frac{w^{1/4} r^{3/4} + r^{3/4} \cdot w^{1/4} \cdot 3}{3^{3/4}} \right] &= \\ \frac{9}{8} \cdot 4 \left(\frac{w^{1/4} \cdot r^{3/4}}{3^{3/4}} \right) &= \\ \frac{9}{2} \cdot \frac{w^{1/4} \cdot r^{3/4}}{3^{3/4}} & \text{ or DIMENSION} \end{aligned}$$

ES. 2

$$X^D = 5000 - \frac{1}{5}P \quad X^S = 2000 + \frac{1}{10}P$$

a)

$$5000 - \frac{1}{5}P = 2000 + \frac{1}{10}P$$

$$3000 = \frac{3}{10}P \quad P = 10000 \quad \rightarrow X^D = X^S = 3000$$

b)

$$X^D = 5000 - \frac{1}{5}P_D$$

$$X^S = 2000 + \frac{1}{10}(P_S) = 2000 + \frac{1}{10}P$$

$$P_D = P_S + 500$$

$$5000 - \frac{1}{5}P_S - 100 = 2000 + \frac{1}{10}P_S$$

$$2900 = \frac{3}{10}P_S \quad P_S = \frac{29000}{3} = 9666,67$$

$$\Rightarrow P_D = 10166,67$$

$$X^D = X^S = 2966,67$$

c) gettito fiscale: $(P_D - P_S) \cdot X^D = 500 \cdot 2966,67 = 1483335$

incidenza impositiva: $\frac{P_D - P}{P - P_S} = 0,50015$

$$\text{ES 3} \quad I = 35 \quad C = 5 + 0,8 Y_d \quad G = 40 \quad t = 0,25$$

$$TR = 25$$

A)

$$DA = C + I + G \quad Y_d = (1-t)Y + TR$$

$$Y_d = 0,75Y + 25$$

$$C = 5 + 0,8(0,75Y + 25) = 25 + 0,6Y$$

$$DA = 25 + 0,6Y + 35 + 40 = 100 + 0,6Y$$

$$DA = Y \quad 100 = 0,4Y$$

$$Y = 250$$

$$T = t \cdot Y = 0,25 \times 250 = 62,5$$

$$S. \text{ Bil stat} = T - G - TR = 62,5 - 40 - 25 = -2,5$$

B) $Y = 300 \quad G = ? \quad I = 35 \quad TR$

$$Y_d = 0,75 \cdot 300 + 25 = 250$$

$$DA = 205 + 35 + G = 240 + G$$

$$DA = 300 \rightarrow \boxed{G = 60} \quad T = t \cdot Y = 75$$

$$S. \text{ Bil stat} = 75 - 60 - 25 = -10 \quad \boxed{\Delta G = 20}$$

c) $I = 35 \quad C = 5 + 0,8 Y_d \quad G = 40 \quad t = 0,25$
 $Y = 300 \quad TR = ?$

$$Y_d = (1 - 0,25)300 + TR = 225 + TR$$

$$DA = 5 + 0,8(225 + TR) + 35 + 40 = 260 + TR \stackrel{DA=300}{=} \boxed{TR = 50}$$

$$\boxed{\Delta TR = 25}$$

$$T = t \cdot Y = 75$$

$$\text{\$ Bil Stat} = 75 - 40 - 50 = -15$$

$$D) I = 35 \quad C = 5 + 0,8 Y_d \quad G = 40 \quad t = ?$$

$$TR = 50$$

$$Y_D = (1-t)Y + 50$$

$$DA = 5 + 0,8(1-t)Y + 40 + 35 + 40 = \\ 120 + 0,8(1-t)Y$$

$$\text{\$ Bil Stat} = -2,5$$

$$-2,5 = t \cdot Y - 40 - 50$$

$$\begin{cases} t \cdot Y = 87,5 \\ 120 + 0,8Y - 0,8tY = Y \end{cases} = D$$

$$50 = 0,2 Y \Rightarrow 250 \quad \underline{\text{Welle im Jahre}}$$

$$t = \frac{87,5}{250} = 0,35$$