

- Práctica 2:

1. $Q = 64 K^{1/2} L^{1/2};$

$$\begin{cases} K = 400 \text{ u.m} \\ Q = 512.000 \text{ u} \end{cases}$$

$$512.000 = 64 \cdot (400)^{1/2} \cdot L^{1/2};$$

$$L = 160.000 \text{ u. trabajo}$$

2. $Q = 4L^2 (K - 5L);$

$$K = 300;$$

a) $PM_L = \frac{\partial Q}{\partial L} = 8 \overset{300}{K} - 60L^2;$

$$L(2400 - 60L) = 0 \quad \left\{ \begin{array}{l} L=0 \\ L = \frac{2400}{60} = 40 \end{array} \right.$$

b) Este se alcanza con el PM_L alcanza max:

$$PM_L = \frac{Q}{L} = \frac{4L^2(K-5L)}{L} = 4L(K-5L);$$

$$4K - 40L = 0; \Rightarrow L = 30 \text{ u. trabajo.} \Rightarrow \frac{d^2 PM_L}{dL} = -40 < 0 \quad (\text{Máximo})$$

c) Se alcanza con $PM_L = 0;$

$$L = 40 \text{ u. trabajo}$$

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

$$RMST = \frac{PM_L}{PM_K} = \frac{\frac{1}{4} L^{-3/4} K^{3/4}}{\frac{3}{4} L^{1/4} K^{-1/4}} \Rightarrow \frac{1}{3} \frac{K}{L};$$

$$4. \quad CT = q^3 - 2q^2 + 10q + 200;$$

$$\left\{ \begin{array}{l} \rightarrow CVT = q^3 - 2q^2 + 10q; \\ \rightarrow CFT = 200; \end{array} \right\}$$

$$\left\{ \begin{array}{l} \rightarrow CTMe = q^2 - 2q + 10 + \frac{200}{q} \Rightarrow \frac{CT}{q} \\ \rightarrow CVMe = \frac{CVT}{q} = q^2 - 2q + 10; \end{array} \right\}$$

$$\left\{ \begin{array}{l} \rightarrow CFMe = \frac{200}{q} \\ \rightarrow CMq = \text{derivamos respecto de } q \Rightarrow 3q^2 - 4q + 10; \end{array} \right\}$$

$$5. \quad \frac{CT}{q} \text{ y } CT = CVT + CFT;$$

$$\frac{q^3 - 3q^2 + 32q + \frac{1}{q} [CFT]}{q} = 0 \Rightarrow 2q - 3 - \frac{k}{q^2} = 0;$$

• Sustituimos $q=3$:

$$6 - 3 - \frac{k}{9} = 0 \Rightarrow 3 - \frac{k}{9} = 0; \quad k = 27 \Rightarrow \boxed{CFT}$$

$$6. \quad Q = 8L^{1/2} K^{1/2} \Rightarrow Q = 120;$$

$$a) \quad RMST = \frac{P_M L}{P_M K} = \frac{4L^{-1/2} K^{1/2}}{4L^{1/2} K^{-1/2}} = \frac{K}{L}; \quad \left. \begin{array}{l} \\ \\ \end{array} \right\} \quad 3L = 27K \Rightarrow L = 9K$$

$$RMST = \frac{w}{r} = \frac{3}{27};$$

$$120 = 8(9K)^{1/2} \cdot K^{1/2} \Rightarrow K = \frac{120}{24} = 5$$

$$L = 9K = 45$$

$$b) \quad CT = wL + rK \Rightarrow 3 \cdot 45 + 27 \cdot 5 = 270 \text{ u.m}$$