

$$= \text{Nw} = 2 \text{ kg} \cdot \text{m} + / \text{s}^2$$

$$T = 19.62 \text{ J}$$

2. calcular el trabajo que se debe realizar para levantar una masa de 5 kg a una altura de 2 m + .

$$T = F \cdot d$$

$$F = m \cdot g$$

$$\text{Datos: } T = (49.05 \text{ Nw})(2 \text{ m} +)$$

$$M = 5 \text{ kg} \quad F = (5 \text{ kg})(9.81 \text{ m} + / \text{s}^2)$$

$$d = 2 \text{ m} + \quad F = 49.05 \text{ Nw}$$

$$T = 98.1 \text{ J}$$

$$F = 49.05 \text{ Nw}$$

$$T = 98.1 \text{ J}$$

**RES**

3. una fuerza de 100 dinas aplicada a un ángulo de 30° mueve horizontalmente una masa de 10 g, una distancia de 5 cm. si se desprecia la fricción que trabajo realiza.

DATA:

$$T = ?$$

$$d = 1000 \text{ mT}$$

$$m = 20 \text{ TON}$$

$$t = 1 \text{ HR}$$

$$F = 20000 \text{ NW}$$

$$v = 36 \text{ km/hr}$$

$$T = F \cdot d$$

$$T = m \cdot g \cdot d$$

$$T = (20000 \text{ kg}) (9.81 \text{ m/s}^2) (1000 \text{ mT})$$

$$T = 196200000 \text{ J}$$

$$T = (20000 \text{ kg}) (9.81 \text{ m/s}^2) (36000 \text{ mT})$$

$$T = 7063200000 \text{ J}$$

DNT 05'

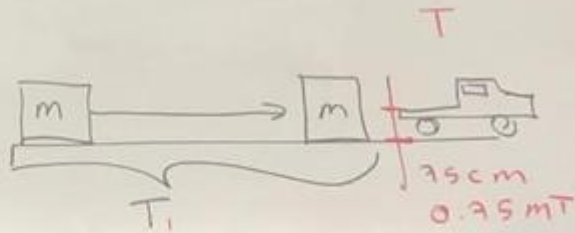
$T = ?$

$$m = 65 \text{ kg}$$

$$d = 10 \text{ mT}$$

$$F = 300 \text{ Nw}$$

$$d = 75 \text{ cm}$$



$$T_1 = m \cdot g \cdot d$$

A)

$$T_1 = (65 \text{ kg})(9.81 \text{ mT/s}^2)(10 \text{ mT})$$

$$T_1 = 6376.5 \text{ J}$$

B)

$$T_2 = (300 \text{ N})(0.75 \text{ mT})$$

$$T_2 = 225 \text{ J}$$

Hallar el peso que puede arrastrar un vehículo  
 de 6 cav sobre un terreno horizontal a la  
 velocidad de 25 Km/hr sabiendo que el coeficien-  
 te de rozamiento entre el peso y el terreno es  
 de 0.2

Datos:  $T = (4,410 \text{ w})$   $\left( \frac{\text{N}}{3600 \text{ s}} \right) = 15,876,000 \text{ J}$   
 $\mu = 0.2$   $\frac{\text{w}}{3600 \text{ s}} = 4,410 \text{ N} = \frac{T}{Mg}$

$P_{\text{osc}} = V \cdot F = 6 \text{ M} = 25 \text{ Km/hr}$   $M_i = 0.2$   $d = 25 \text{ Km} = 25000 \text{ m}$   $F = 3600 \text{ s}$

Que carga puede levantar un montacarga de 20 CV a una velocidad constante de 50 m/min sin exceder su rendimiento.

Datos:

$$C.V = 20$$

$$v = 50 \text{ m/min}$$

$$m = 1,800 \text{ Kg}$$

$$d = 50 \text{ m}$$

$$T = 1 \text{ min} = 60 \text{ seg}$$

$$g = 9.81 \text{ m/s}^2$$

$$20 \text{ CV}$$

$$\frac{735 \text{ W} \times 20}{1 \text{ CV}} = 14,700 \text{ W/min}$$

$$4500 \text{ Kg m/min}$$

$$1 \text{ CV} = 735 \text{ Kg m/s}$$

$$P = m \cdot g$$

$$T = (4500 \text{ W}) (60 \text{ s}) \quad T = P \cdot t$$

$$T = 882,000 \text{ J}$$

$$T = F \cdot d = F \cdot$$

$$F = \frac{882,000 \text{ J}}{50 \text{ m}}$$

$$F = P = 17,640 \text{ N}$$

$$50 \text{ m}$$

65 Un. avión que pesa 25000 kg sube a una altura de 1.6 Km en 5 min. calcular la potencia utilizada en c.v.

Datos

$$M = 25000 \text{ Kg}$$

$$h = 1.6 \text{ Km}$$

$$T = 5 \text{ min}$$

$$C.V = 53,387.75 \text{ c.v. } P = 39,240,000 \text{ w}$$

$$P = 39,240,000 \text{ w}$$

$$P = (25000 \text{ Kg}) (9.81 \text{ m/s}^2) \left( \frac{1.6 \text{ Km}}{1000} \right)$$

$$\frac{300 \text{ seg}}{5 \text{ min} \cdot 60 \text{ s}}$$

$$= 300 \text{ seg}$$

$$C.V = 39,240,000 \text{ w} \cdot \frac{1}{735 \text{ w}} = 53,387.75 \text{ c.v.}$$

$$P.C.V = 53,387.75 \text{ c.v.}$$

Que carga puede levantar un motor de 1000 hp

$$P = \frac{15,876,000 \text{ J}}{(0.2)(25000 \text{ m}^2)} = P = 3,1175.2 \text{ Nm}$$

DATOS:

$$T = ?$$

$$V = 10 \text{ dm}^3 \cdot \frac{1^3 \text{ m}^3}{10^3 \text{ dm}^3} = 0.001 \text{ m}^3 = 1 \times 10^{-3} \text{ m}^3$$

$$d = 3 \text{ m}$$

$$g = 9.81 \text{ m/s}^2$$

$$P =$$

$$m = \frac{\rho}{V} = \frac{997 \text{ kg/m}^3}{0.001 \text{ m}^3}$$

$$m = 997000 \text{ kg}$$

$$T = F \cdot d$$

↓

$$T = m \cdot g \cdot d$$

$$T = (997000 \text{ kg})(9.81 \text{ m/s}^2)(3 \text{ m})$$

$$T = 29341710 \text{ J}$$