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Nombre del tema: Plataforma

Parcial:IIII

Nombre de la Materia: Física

1:

$$T = F \cdot d$$

$$a) T = (30\text{N}) \cdot (0.6\text{cm})$$

$$T = 18\text{J}$$

$$b) T = F \cos \alpha \cdot d$$

$$T = (30) \cos 30^\circ \cdot (0.6\text{m})$$

$$T = 15.58811\text{e}$$

Datos

$$F = 30\text{N}$$

$$d = 60\text{cm} \rightarrow 0.6\text{m}$$

2:

$$T = m \cdot g$$

$$F = m \cdot g$$

Datos

$$m = 25\text{kg}$$

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

$$d = 6.4\text{m}$$

$$F = m \cdot g = (25\text{kg}) (9.81\text{ m/s}^2)$$

$$245.25\text{ m/s}^2$$

$$T = d \cdot 245.25 = (6.4) = 1,568$$

3:

$$T = F \cdot d$$

Datos

$$F = 3\text{N}$$

$$d = 1200\text{cm} \rightarrow 12\text{m}$$

$$T = (3\text{N}) \cdot (12\text{m})$$

$$T = 36\text{J}$$

4:

Datos

$$m = 600\text{kg}$$

$$d = 150\text{m}$$

$$\cos = 70^\circ$$

$$m = 0.65$$

$$b) F \cdot M \cdot d$$

$$T = 58860 \cdot 0.65 = 150$$

$$T = 5,738850\text{J}$$

$$F = [6000] (9.81) = 58860$$

5:  
Dato  
 $F = 12 \text{ N}$   
 $d = 7 \text{ m}$

$$T = F \cdot d \quad a)$$
$$T = (12 \text{ N}) \cdot (7 \text{ m})$$
$$T = 84 \text{ J}$$

$$b = T = 84 \text{ J}$$

6: Dato a)  $F = m \cdot g$   $T = F \cdot d$

$$m = 50 \text{ kg} \quad F = (50 \text{ kg}) (9.81 \text{ m/s}^2)$$
$$d = 8 \text{ m} \quad F = 490.5 \text{ N}$$
$$T = ? \quad T = (490.5 \text{ N})$$

$$(8 \text{ m}) = 3924 \text{ J}$$

$$8 = m = 20 \quad T_{\text{on}} = 20000 \text{ kg} \quad F = 20000 \text{ N}$$

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

$$T = m \cdot g \cdot d \quad d = m \cdot g \quad d = \frac{20000 \cdot 9.81}{20000} = 9.81$$

$$T = 20000 \text{ kg} \cdot 9.81 \cdot 9.81 = 1924722 \text{ J}$$

9. Dato

$$m = 65 \text{ kg}$$
$$d = 10 \text{ m}$$

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

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

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

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

$$10 = F \cdot 24 \text{ m} \quad d = 10 \text{ m}$$

$$a) 30^\circ \quad T = F \cos \theta \cdot d$$
$$T = (24) (\cos 30^\circ) (10 \text{ m})$$

$$T = 207.84 \text{ J}$$

$$b) 90^\circ$$

$$T = F \cos \theta \cdot d$$

$$T = (24) (\cos 90^\circ) (10 \text{ m})$$

no se efectua trabajo en el cuerpo  
porque  $\cos 90^\circ = 0$

$$c) 120^\circ$$

$$T = F \cos \theta \cdot d$$

$$T = (24) (\cos 120^\circ) (10 \text{ m})$$

$$T = 20 \text{ J}$$

$$11 = F = m \cdot g$$

$$T = F \cdot d$$

$$P = \frac{T}{t}$$

Datos  $m = 1500 \text{ kg}$

$h = 1500 \rightarrow 15 \text{ m}$

$t = 2 \text{ min} \rightarrow 120 \text{ s}$

$$F = (1500 \text{ kg}) (9.8 \text{ m/s}^2) = 14,715 \text{ N}$$

$$T = (14,715 \text{ N}) (15 \text{ m}) = 220,725 \text{ J}$$

$$P = \frac{T}{t} = \frac{220,725 \text{ J}}{120} = 1,839,375 \text{ w}$$

$$b) \text{ kw}$$

$$1,839,375 \text{ w}$$

$$\frac{T}{1000} \text{ kw}$$

$$c) \text{ a.v}$$
$$1,839,375 \text{ w} \cdot \frac{1.3}{1}$$
$$c.v = 2,446,6075$$

$$12 = F = m \cdot g$$

$$v = 50 \text{ km/hr} = 40 \text{ cv}$$

$$v = \frac{d}{t} \quad p = 50 \text{ km} \cdot t = 1412 \rightarrow 5,600 \text{ ccg}$$

$$P = 50,000 \text{ m} \quad t = (1030,07 \text{ w})(3600) = 3708 \text{ s}$$

$$t = 3600 \text{ s} \quad F = J/d = (3708 \text{ s}) \div (5000)$$

$$P = 1030,07 \text{ w} \quad F = 74,15 \text{ N}$$

$$13 = \text{Datos} = m = 50 \text{ kg} \quad d = 18 \text{ m} \quad T = 40 \text{ s}$$

$$a) \text{ w} \quad P = \frac{61803 \text{ J}}{40 \text{ s}} = 1545,075 \text{ w}$$

$$P = \frac{T}{t} \quad T = F \cdot d = (3433,5) (18) = 61803 \text{ J}$$

$$F = 50 \cdot 9,81 = 3433,5 \text{ N}$$

b) kw

$$1 \text{ kw} = 1000 \text{ w}$$

$$1545,075 \text{ w} \cdot \frac{1 \text{ kw}}{1000} = 1,545075 \text{ kw}$$

14 = Datos

$$m = 25000 \text{ kg} \quad P = \frac{T}{t} \quad T = F \cdot d$$

$$h = 7,6 \text{ km} \rightarrow 1600 \text{ m} \quad F = m \cdot g$$

$$T = 5 \text{ min} = 300 \text{ ccg}$$

$$F = (25000 \text{ kg})(9,81 \text{ m/s}^2) = 245250 \text{ N}$$

$$T = (245250 \text{ N})(1600 \text{ m}) = 392400000 \text{ J}$$

$$P = \frac{T}{t} = \frac{392400000}{300} = 1308000 \text{ w}$$

$$\text{kw} = 13,080 \text{ kw}$$

$$1 = \text{kw} = 1,33 \text{ cv}$$

$$13,080 \text{ kw} \cdot \frac{1,33 \text{ cv}}{1} = 17,396,400$$

$$\text{cv} = 17,396,400$$

15°

$$CV = 20$$

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

$$16 \circ P = m \cdot g \text{ (Peso)}$$

$$CV = 6$$

$$V = 25 \text{ km/hr}$$

$$m = 0.2$$

$$17 = P = 250 \text{ kw} \quad m = 1000 \text{ kg} \quad F = 9810 \text{ N} \quad a = 1$$

$$d = \frac{m \cdot g}{F}$$

$$v = \frac{\sqrt{2 (9810 \text{ N}) (1)}}{1000}$$

$$v = 19.62 \text{ m/s}$$

$$F = m \cdot g (1000) \cdot (9.81) = 9810 \text{ N}$$

$$d = m \cdot g$$

$$d = \frac{9810 \text{ N}}{9810} = 1$$

~~18°~~  $m = 80 \text{ kg} \quad h = 300 \text{ m} \quad t = 3 \text{ min} = 180 \text{ s}$

$$P = \frac{235440}{180 \text{ s}}$$

$$P = \frac{T}{t}$$

$$F = m \cdot g = (80)(9.81) = 784.8 \text{ N} \quad P = 1,308$$

$$T = F \cdot d = (784.8)(800 \text{ m}) = 235440 \text{ J}$$

$$T = m \cdot g \cdot d \quad T = (80)(9.81)(800) = 235440 \text{ J}$$

$$19: m = 130 \text{ kg} \quad d = 10 \text{ m} \quad t = 2 \text{ min} \rightarrow 120 \text{ s}$$

$$P = \frac{T}{t} = \frac{127537}{120} = \underline{\underline{1062.75}} //$$

$$T = F \cdot d = (12753 \text{ N}) (10 \text{ m}) = 12753 \text{ J}$$

$$F = m \cdot g = (130) (9.81) = 1275.3 \text{ N}$$

$$20: P = \frac{T}{t} \quad T = F \cdot d \quad F = m \cdot g \quad \text{dadas: } d = 20 \text{ m} \\ t = 50$$

$$F = (130 \text{ kg}) (9.81 \text{ m/s}^2) \quad m = 130 \text{ kg} \\ = 1275.3 \text{ N}$$

$$T = (1275.3 \text{ N}) (20 \text{ m}) = 25506 \text{ J}$$

$$P = \frac{T}{t} = \frac{25506}{605} = 46.7 \text{ w}$$

$$425.7 \text{ w} \quad \frac{1}{1000} \text{ kw} = 0.4257 \text{ kw} \quad \frac{1.33 \text{ l}}{1}$$

$$CV = 0.565383 \text{ cv}$$

$$21: \text{Dadas } m = 2 \text{ kg} \quad h = 3 \text{ m}$$

$$E_p = mgh$$

$$(2 \text{ kg}) \cdot (9.81 \text{ m/s}^2) (3 \text{ m}) = 58.86$$

$$b) T = E_p = \underline{\underline{58.86}} //$$

22- Distancia

$$m = 200 \text{ kg}$$

$$v = 30 \text{ m/s}$$

$$F = 500 \text{ N}$$

$$F \cdot d = m \cdot a \cdot d$$

$$F \cdot d = m \cdot g \cdot d$$

$$d = \frac{m \cdot g}{F}$$

$$d = \frac{(200 \text{ kg})(9.81)}{500 \text{ N}} = 3.924 \text{ J}$$

23- velocidad

$$F = 12.5 \text{ kg} \rightarrow \text{N (m} \cdot \text{g)}$$

X

$$9.81 = 122.62$$

$$D = 6$$

$$M = 250 \text{ kg}$$

$$v = \frac{\sqrt{2(F)(d)}}{m}$$

$$v = \frac{\sqrt{2(122.62)(6)}}{250}$$

$$v = \frac{(245.24)(12)}{250} = 2,942.82$$

$$v = 11.77 //$$

24- E. c. unabada de 6gr  $v = 500 \text{ m/s}$

$$m = 0.006 \text{ kg}$$

$$v = 500 \text{ m/s}$$

$$E \cdot c = \frac{m \cdot v^2}{2}$$

$$E \cdot c = \frac{(0.006 \text{ kg})(500 \text{ m/s})^2}{2}$$

$$E \cdot c = 1.5 \text{ J}$$



28: Altura

$$m = 6 \text{ kg}$$

$$E.P = 80 \text{ J}$$

$$6 \times 9.81 = 58.86 \text{ N}$$

$$d = \frac{m \cdot g}{F}$$

$$d = \frac{(6) (9.81)}{58.86 \text{ N}}$$

$$\frac{58.86}{58.86} = 1$$

29. E.P

$$m = 5 \text{ kg}$$

$$h = 10 \text{ ms}$$

$$g = 9.81$$

$$A) E.P = m \cdot g \cdot h$$
$$(5) (9.81) (10) = 490.5 \text{ J}$$

$$B) E.c = \frac{mv^2}{2}$$

$$v = \sqrt{2(F)(d)}$$

$$5 \text{ kg} \cdot 9.81 = 49.05 \text{ N}$$

25 = peso

$$m = \frac{P}{g} = \frac{3.6 \text{ Nw}}{(9.81)} = 0.36$$

$$v = 13 \text{ m/s} = E.C$$

$$E.C = \frac{m \cdot v^2}{2}$$

$$\frac{(0.36) \cdot (169)}{2} = 60.84 \text{ J}$$

$$T.P.S.P.C = (130) (0.005) = 6$$

26 = velocidad

$$m = 5 \text{ kg} \rightarrow 49.05 \text{ N}$$

$$W = \frac{m \cdot g}{F}$$

$$E.C = 225 \text{ J}$$

$$\frac{(5)(9.81)}{49.05} = 0.9$$

$$g = 9.81$$

$$\boxed{0.9}$$

$$J = 0.9 \text{ J}$$

$$v = \sqrt{2(F)(J)}$$

$$v = \sqrt{2(49.05)(0.9)}$$

$$v = (9.81) \frac{5 \text{ kg}}{5} = 176.57$$

$$v = 35.316$$

27 = E.P

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

$$E.P = mgh$$

$$h = 2.5 \text{ m}$$

$$(3 \text{ kg}) \cdot (9.81) (2.5) = 73.57 \text{ J}$$

$$g = 9.81$$