

UDS

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Nombre del alumno : María José Albores Escalante

Parcia : 1

Nombre de la materia : Física

Carrera : BRH

1.- valor de trabajo
D datos

a)

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

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

Solución

$$W = 30 \text{ N} \cdot 0.6 = 18.3$$

$$W = F \cdot d \quad \left| \begin{array}{l} \text{b) horizontal} \\ F = 30 \text{ N} \end{array} \right.$$

$$W = F \cdot d \cdot \cos \alpha$$

$$d = 0.6 \text{ m}$$

$$\alpha = 30^\circ$$

$$W = 30 \text{ N} \cdot 0.6 \text{ m} \cdot$$

$$0.8660254 = 15.58$$

2.- Valor de trabajo

Datos

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

$$h = 8.4 \text{ m}$$

Formula

$$W = m \cdot g \cdot h$$

Solución

$$W = 25 \text{ kg} \cdot 9.81 \text{ m/s}^2 \cdot 8.4 = 2019.75 \text{ J}$$

3.- trabajo

Datos

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

$$d = 1200 \text{ cm} = 1.2 \text{ m}$$

Solución

$$W = 3 \text{ N} \cdot 1.2 \text{ m} = 3.6 \text{ J}$$

4.- Datos

$$m = 6000 \text{ kg}$$

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

$$\alpha = 20^\circ$$

$$M = 0.65$$

b) $F \cdot m \cdot d$

$$\Gamma = 58860 \cdot 0.65 \cdot 150$$

$$\Gamma = 5,738,850 \text{ J}$$

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

5.- Fuerza

Datos

$$F = 12 \text{ N}$$

$$d = 7 \text{ m}$$

Fórmula

$$W = F \cdot d$$

a) Solución

$$W = 12 \text{ N} \cdot 7 \text{ m} = 84 \text{ J}$$

$$b) W = 12 + 7 \text{ m} = 84 \text{ J}$$

6.- Trabajo

Datos

$$F =$$

$$d = 8 \text{ m} = h$$

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

Fórmula

$$W = m \cdot g \cdot h$$

Solución

$$W = 50 \text{ kg} \cdot 9.81 \cdot 8 = 3.924 \text{ J}$$

7.- Trabajo

$$W = m \cdot g \cdot h$$

$$F =$$

$$m = 10 \text{ m}^3 = v = 10 \text{ ltr} = 10 \text{ K}$$

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

$$W = 10 \text{ kg} \cdot 9.81 \cdot 3 \text{ m} = 294.30 \text{ J}$$

8.- Trabajo

Datos

$$F = 20,000 \text{ N}$$

$$d = 1 \text{ km} = 1,000 \text{ mtrs}$$

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

$$W = 20,000 \text{ N} \cdot 1,000 \text{ m} = 20,000,000 \text{ J}$$

9.

a) $W = 300\text{ N} \cdot 10\text{ m} + 1 = 3000\text{ J}$

b) $W = m \cdot g \cdot h$

$W = 65\text{ kg} \cdot 9.81\text{ m/s}^2 \cdot 0.75\text{ m} = 478.24\text{ J}$
 $= 3478.24\text{ J}$

10. - $F = 24\text{ N}$ $d = 10\text{ m}$

a) 30° $T = F \cos \alpha$
 $T = (24) (\cos 30^\circ) (10\text{ m})$
 $T = 207.84\text{ J}$

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

b) 90° $T = F \cos \alpha$
 $T = 24 \cdot \cos 90^\circ \cdot 10\text{ m}$

\downarrow
 $= 0$

11. - $F = m \cdot g$ $T = F \cdot d$ $P = \frac{T}{t}$

$m = 150\text{ kg}$

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

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

$F = 1500\text{ kg} \cdot 9.81 = 14715\text{ N}$

$T = 14715\text{ N} \cdot 15\text{ m} = 220725\text{ J}$

$P = \frac{T}{t} = \frac{220725}{120} = 1839.375\text{ W}$

b) kw
 $1839.375 \cdot \frac{1}{1000} \text{ kw}$
 $\text{kw} = 1.839375$

c) CV
 $1.839375 \cdot \frac{1.33}{1}$
 $\text{CV} = 2.44636875$

12.- $F = m \cdot g$

$V = 50 \text{ km/hr} = 40 \text{ CV}$

$V = \frac{d}{t}$ $p = 50 \text{ km/t} = 1412 \rightarrow 3,600 \text{ seg}$

$P = 50,000 \text{ m}$

$t = 3600 \text{ s}$

$P = 1030.07 \text{ W}$

$t = (1030.07 \text{ W}) (3600) = 3708252$

$F = J/d = 3708252 \div (50000)$

$F = 74.16 \text{ N}$

$T = F \cdot d$

$F = m \cdot g$

13.- $F = m \cdot g$

a) w
 $P = \frac{T}{t}$ $P = \frac{618025}{40} = 1545.075 \text{ W}$

14.- $P = \frac{T}{t}$ $T = F \cdot d$ $F = m \cdot g$

$F = (25000 \text{ Kg}) 9.81 \text{ m/s}^2 = 245250 \text{ N}$

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

$P = \frac{T}{t} = \frac{392400000}{500 \text{ seg}} = 784800000 \text{ W}$

15.- $Cv = 20$

$V = 50 \text{ m/mi}$

16.- $P = m \cdot g$ (peso)

$Cv = 6$

$V = 25 \text{ Km hr}$

$m = 0.2$

17.- $P = 250 \text{ Kw}$ $m = 1000 \text{ Kg}$

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

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

22.- Distancia

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

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

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

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

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

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

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

23.- Velocidad

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

$$9.81 = 122.62$$

$$D = 6$$

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

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

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

$$V = \frac{(245.24)(12)}{250} = \frac{2942.88}{250}$$

$$V = 11.77$$

19.- Distancia

$$M = 130 \text{ kg}$$

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

$$t = 2 \text{ m} = 1200 \text{ s}$$

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

$$F = 1.275 \cdot 31$$

$$F = 130 \text{ kg} \cdot 9.81$$

$$F = 1,275 \text{ Nw / tiempo}$$

$$T = 11.275 \cdot 3 \cdot 10$$

$$t = 12,750$$

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

$$P = \frac{12,750}{1,275 \cdot 3}$$

$$P = 9.9976476123$$

20.- Datos

$$Wp = 9.9976476123 \text{ wt}$$

$$P = 0.0099976476 \text{ kw}$$

$$\frac{1.333 \text{ cv}}{1}$$

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

$$1000 \text{ w}$$

$$0.00999764$$

$$= 0.0132968$$

22.- Distancia

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

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

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

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

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

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

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

23.- Velocidad

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

$$9.81 = 122.62$$

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

$$D = 6$$

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

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

$$V = \frac{(245.24)(6)}{250} = 2,942.88$$

$$V = 11.77$$

19.- Distancia

$$M = 130 \text{ kg}$$

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

$$t = 2 \text{ m} = 1200 \text{ s}$$

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

$$F = 1.275 \cdot 3$$

$$F = 130 \text{ kg} \cdot 9.81$$

$$F = 1,275 \text{ NW / tiempo}$$

$$T = 11.275 \cdot 3 \cdot 10$$

$$t = 12,750$$

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

$$P = \frac{12,750}{1,275 \cdot 3}$$

$$P = 9.9976476123$$

20.- Datos

$$Wp = 9.9976476123 \text{ wt}$$

$$P = 0.0099976476 \text{ kW}$$

$$\frac{1.333 \text{ CV}}{1}$$

$$\frac{1 \text{ kW}}{1000 \text{ W}}$$

$$0.00999764$$

$$= 0.0132968$$

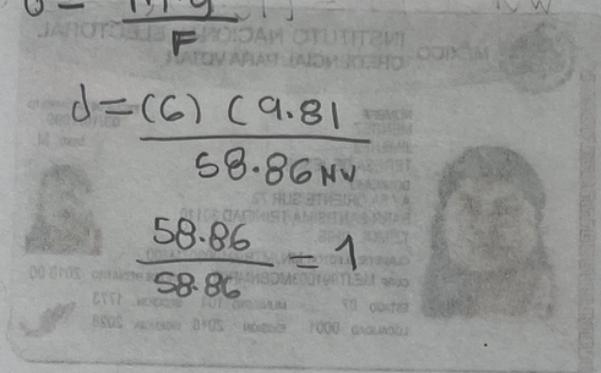
28. - Altura = 1

$$M = 6 \text{ kg} = (6 \text{ kg}) \cdot g = \frac{m \cdot g}{F} = \dots \text{ NW}$$

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

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

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



29. - E.P

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

$$HA = 10 \text{ m/s}$$

$$G = 9.81$$

A) $E.P = m \cdot g \cdot h$

$$(5) (9.81) (10) = 490.5 \text{ J}$$

B) E.C

$$= \frac{Mv^2}{2}$$

$$\sqrt{\frac{2(E.P)}{M}}$$

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

$$2 (5) (10)$$

