



Nombre del Alumno: Santiago Najera Ramírez

Nombre del tema: Plataforma

Parcial: IIII

Nombre de la Materia: Física

1. Trabajo $T = F \cdot d$

Datos

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

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

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

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

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

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

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

2. Trabajo

$$F = m \cdot g$$

Datos

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

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

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

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

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

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

3. Trabajo

$$T = F \cdot d$$

Datos

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

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

$$T = 36$$

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

$$12 \text{ m} \leftarrow$$

4. Datos

$$T = F \cdot d$$

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

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

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

$$T = 36$$

b) $F \cdot M \cdot d$

$$T = 58860 \cdot 0.65 \cdot 15$$

$$\alpha = 0^\circ$$

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

$$M = 0.65$$

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

5. Trabajo

$$T = F \cdot d$$

Datos

$$T = (12 \text{ N}) \cdot (7 \text{ m})$$

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

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

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

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

6. Datos a) $F = m \cdot g$ $T = F \cdot d$
 $= 50 \text{ Kg}$ $F = (50 \text{ Kg}) (9.81 \text{ m/s}^2)$
 $d = 8 \text{ m}$ $F = 490.5 \text{ N}$ $T = (490.5 \text{ N}) (8 \text{ m}) = 3924 \text{ J}$
 $T = ?$

8. $m = 20 \text{ Ton} = 20000 \text{ Kg}$ $F = 20000 \text{ N}$ $v = 36 \text{ Km/hr}$
 $T = m \cdot g \cdot d$ $d = \frac{m \cdot g}{F}$ $d = \frac{20000 \cdot 9.81}{20000} = 9.81$
 $T = \frac{20000 \text{ Kg} \cdot 9.81 \cdot 9.81}{m \cdot g \cdot d} = 1924722$

9. Datos $T = (65 \text{ Kg}) (9.81 \text{ m/s}^2) (10 \text{ m})$
 $m = 65 \text{ Kg}$ $T = 6376.5 \text{ J}$
 $d = 10 \text{ m}$ $T = m \cdot g \cdot d$
 $F = 300 \text{ N}$

10. $F = 24 \text{ N}$ $d = 10 \text{ m}$ c) 120°
a) 30° $T = F \cos \alpha \cdot d$ $T = F \cos \alpha \cdot d$
 $T = (24) (\cos 30^\circ) (10 \text{ m})$ $T = (24) \cos 120^\circ (10 \text{ m})$
 $T = 207.84 \text{ J}$ $T = 120 \text{ J}$

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

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

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

11. $F = m \cdot g$ $T = F \cdot d$ $P = \frac{W}{t}$ Datos $m = 1500 \text{ Kg}$ $h = 1500 \rightarrow 15 \text{ m}$
 $F = (1500 \text{ Kg}) (9.8 \text{ m/s}^2) = 14,715 \text{ N}$ c) c.v $\frac{1.33}{1} \text{ CV}$
 $T = (14,715 \text{ N}) (15 \text{ m}) = 220725 \text{ J}$ 1.839375 Kw
 $P = \frac{W}{t} = \frac{220725 \text{ J}}{120} = 1839.375 \text{ W}$ $\text{CV} = 2.44636875$
 b) Kw
 $1839.375 \text{ W} \cdot \frac{1}{1000} \text{ Kw}$
 $\text{Kw} = 1.839375$

12. $F = m \cdot g$
 $v = 50 \text{ km/hr} = 40 \text{ cv}$
 $v = \frac{d}{t}$ $p = 50 \text{ km} \rightarrow 1 \text{ H}12 \rightarrow 3,600 \text{ seg}$
 $P = 50,000 \text{ m}$ $t = (1030.07 \text{ w}) (3600) = 3708252$
 $t = 3600$ $F = \frac{J}{d} = (3708252) \div (50000)$
 $P = 1030.07 \text{ w}$ $F = 74.164$

13. Datos $m = 850 \text{ kg}$ $d = 18 \text{ m}$ $T = 40 \text{ s}$ $T = F \cdot d$
 $F = m \cdot g$
 a) w $P = \frac{61803 \text{ J}}{40 \text{ s}} = 1545.075 \text{ w}$
 $P = T$

$T = F \cdot d = (3433.5) (18) = 61803 \text{ J}$
 $F = 350.9 \cdot 9.81 = 3433.5 \text{ N}$

b) Kw
 $1 \text{ Kw} = 1000 \text{ w}$
 $\frac{1545.075 \text{ w}}{1000 \text{ w}} \cdot 1 \text{ Kw} = 1.545075 \text{ Kw}$

14. Datos
 $m = 25000 \text{ kg}$ $P = T$ $T = F \cdot d$ $F = m \cdot g$
 $h = 1.6 \text{ km} \rightarrow 1600 \text{ m}$ t
 $t = 5 \text{ min} = 300 \text{ seg}$
 $F = (25000 \text{ kg}) (9.81 \text{ m/s}^2) = 245250 \text{ N}$
 $T = (245250 \text{ N}) (1600 \text{ m}) = 392400000 \text{ J}$
 $P = \frac{T}{t} = \frac{392400000}{300 \text{ seg}} = 1308000 \text{ w}$

$Kw = \frac{13,080,000 \text{ w}}{1000} = 13,080 \text{ Kw}$ $\frac{13,080 \text{ Kw}}{10} = 1.33 \text{ c.v.}$
 $1 \text{ Kw} = 1.33 \text{ c.v.}$ $cw = 17,396,400$

15. $c.v. = 20$
 $v = 50 \text{ m/min}$

16. $P = m \cdot g$ (PeSo)
 $c.v. = 6$ $v = 25 \text{ km/hr}$ $M = 0.2$

$$17. P = 250 \text{ Kw} \quad m = 1000 \text{ Kg} \quad F = 9810 \text{ N} \quad a = 1$$

$$d = \frac{m \cdot g}{F} = \frac{1000 \cdot (9.81 \text{ N}) (1)}{1000}$$

$$F = m \cdot g = (1000) \cdot (9.81) = 9810 \text{ N} \quad v = 19.62 \text{ m/s}^2$$

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

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

$$18. m = 80 \text{ Kg} \quad h = 300 \text{ m} \quad t = 3 \text{ min} = 180 \text{ s}$$

$$P = \frac{T}{t} = \frac{235440}{180 \text{ s}} = P = 1,308$$

$$F = m \cdot g = (80)(9.81) = 784.8 \text{ N}$$

$$T = F \cdot d = (784.8)(300 \text{ m}) = 235440 \text{ J}$$

$$T = m \cdot g \cdot d = (80)(9.81)(300) = 235440$$

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

$$P = \frac{T}{t} = \frac{12753 \text{ J}}{120} = 106.275$$

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

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

$$20. P = \frac{T}{t} \quad T = F \cdot d \quad F = m \cdot g \quad \text{datos } d = 20 \text{ m} \quad t = 60 \text{ s} \quad m = 130 \text{ Kg}$$

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

$$T = (1275.3 \text{ N})(20 \text{ m}) = 25,506 \text{ J}$$

$$P = \frac{T}{t} = \frac{25506}{60 \text{ s}} = 425.1 \text{ W}$$

$$425.1 \text{ W} \cdot \frac{1 \text{ Kw}}{1000 \text{ W}} = 0.4251 \text{ Kw} \quad \frac{1.33 \text{ cv}}{1 \text{ Kw}} = 0.365383 \text{ cv}$$

$$21. \text{ Datos } m = 2 \text{ Kg} \quad h = 3 \text{ m}$$

$$E_p = mgh$$

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

$$b) T = E_p = 58.85$$

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

$$9.81 = 122.62$$

$$D = 6 \quad M = 250 \text{ Kg}$$

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

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

$$v = \frac{(245.24)(12)}{250} = 2.942.8$$

$$v = 11.77$$