

28 Datos

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

$$EC = 80 \text{ J}$$

$$h = 1.359 \text{ m}$$

29 Datos

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

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

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

$$EC = 490.98 \text{ J}$$

22 Datas  
 $m = 200 \text{ kg}$   
 $v = 30 \text{ m/s}$   
 $F = 500 \text{ N}$

$$D = \frac{(200)(30)^2}{2(500)}$$

$$D = 180 \text{ m}$$

$$EC = \frac{(200)(30)^2}{2}$$

$$EC = 90,000 \text{ J}$$

23

Datas  
 $F = 12.5 \text{ kg}$   
 $D = 6 \text{ m/s}$   
 $m = 250 \text{ kg}$

$$F = (12.5)(9.81)$$

$$v = 2.4 \text{ m/s}$$

24 Datas  
 $v = 500 \text{ m/s}$   
 $m = 6 \text{ g}$

$$EC = 750000 \text{ J}$$

Datas

$$EC = 30.42 \text{ J}$$

Datas  
 $D = 3.6 \text{ N}$   
 $v = 13 \text{ m/s}$   
 $g = 9.81 \text{ m/s}^2$

25

26 Datas

$m = 5 \text{ kg}$   
 $EC = 225 \text{ J}$

$$v = 9.48$$

27 Datas

$m = 3 \text{ kg}$   
 $d = 2.5 \text{ m}$   
 $g = 9.81 \text{ m/s}^2$

$$EP = 73.57$$

6 Datos

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

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

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

$$F = (50 \text{ Kg})(9.81 \text{ m/s}^2)$$

$$F = 490.5 \text{ N}$$

$$T = (490.5 \text{ N})(8) = 3924 \text{ J}$$

7 Datos

$$m = 0.5 \text{ Kg}$$

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

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

$$F = (0.5)(9.81)$$

$$F = 4.905 \text{ N}$$

$$T = (4.905)(3) = 14.7$$

8 Datos

$$m = 20000 \text{ Kg}$$

$$v = 36 \text{ Km/h}$$

$$T = 3600 \text{ seg}$$

$$T_1 = (20000)(9.81)(3600)$$

$$T_1 = 7,063,200,000 \text{ J}$$

$$T_3 = \frac{(20000)(9.81)(3600)}{3600}$$

$$T_3 = 1,962,000 \text{ J}$$

$$T_2 = \frac{(20000)(9.81)(3600)}{1000}$$

$$T_2 = 7,063,200 \text{ J}$$

9 Datos

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

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

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

$$75 \text{ cm} = 0.75 \text{ m}$$

$$T_1 = 3000 \text{ J}$$

$$T_2 = 478.2375 \text{ J}$$

$$T_T = 3,478.2375$$

10

a) 120

b) 240

c) 120

11  $W = 1839.375 \text{ W}$

$KW = 1.839$   $CV = 244$

①

Datos

$$F = 30 \text{ Nw}$$
$$d = 60 \text{ cm} = 0.6 \text{ mt}$$
$$\theta = 30^\circ$$

$$T = F \cdot d$$
$$T = (30 \text{ Nw})(0.6 \text{ mt})$$
$$T = 18 \text{ J}$$

②

Datos

$$m = 25 \text{ Kg}$$
$$d = 6.4 \text{ mt}$$
$$g = 9.81 \text{ mt/s}^2$$

$$T = (25 \text{ Kg})(9.81 \text{ mt/s}^2)(6.4 \text{ mt})$$
$$T = 1569.6 \text{ J}$$

③

Datos

$$F = 3 \text{ Nw}$$
$$D = 1200 \text{ cm} = 12 \text{ mt}$$

$$T = (3 \text{ Nw})(12 \text{ mt})$$
$$T = 36 \text{ J}$$

④

Datos

$$D = 6000 \text{ Kg}$$
$$d = 1500 \text{ mt}$$
$$\theta = 20^\circ$$
$$v = 0.65$$
$$g = 9.81 \text{ mt/s}^2$$

$$F = (0.65)(9.81 \text{ mt/s}^2)$$
$$F = 6.37 \text{ Nw}$$

$$T = (6.37 \text{ Nw})(0.939)(1500 \text{ mt})$$
$$T = 897.21 \text{ J}$$

⑤

Datos

$$F = 12 \text{ Nw}$$
$$d = 7 \text{ mt}$$

$$T = (12 \text{ Nw})(7 \text{ mt})$$
$$T = 84 \text{ J}$$

12

$$R = 2,165.04 \text{ Nw}$$

Datos

13

$$\begin{aligned} m &= 350 \text{ kg} \\ D &= 18 \text{ m} \\ T &= 40 \text{ seg} \\ g &= 9.81 \text{ m/s}^2 \end{aligned}$$

$$P = \frac{(350)(9.81)(18)}{40}$$

$$P = 1545.075 \text{ W}$$

$$P = 1.545 \text{ kW}$$

Datos

14

$$\begin{aligned} m &= 25000 \text{ kg} \\ d &= 16 \text{ km} \\ T &= 5 \text{ min} \end{aligned}$$

$$F = \frac{(25000)(9.81)(1600)}{300}$$

$$F = \frac{1,308,000 \text{ W}}{1000} = 1,308 \text{ kW}$$

$$F = 1308 \times 1.33 = 1,739.64 \text{ CV}$$

15 Datos

$$\begin{aligned} P &= 20 \text{ CV} \\ v &= 50 \text{ m/s} \\ d &= 50 \text{ m} \\ T &= 15 \text{ seg} \end{aligned}$$

$$T = (20 \text{ CV})(1)$$

$$T = 20 \times 15 \text{ kW} = 15000 \text{ W}$$

$$F = \frac{15000}{50}$$

$$m = \frac{15000}{9.81}$$

$$\begin{aligned} F &= 300 \\ F &= 300 \end{aligned}$$

$$m = 1529.05$$

$$P = (1529.05)(9.81) = 15000 \text{ kW}$$

16 Datos  $R = 129.912 \text{ Nm}$

17 Datos  
 $P = 250 \text{ Kw}$   
 $m = 1000 \text{ Kg}$   
 $250 \text{ Kw} \cdot 1.33 \frac{\text{W}}{\text{Kw}} = 332.5 \text{ W}$   
 $332.5 \text{ CV} \cdot \frac{75 \text{ Kg m/s}^2}{1 \text{ CV}} = 24,937.5$   
 $\frac{24,937.5}{100} = V = 24.9375 \text{ m/s}$

19 Datos  
 $m = 130 \text{ Kg}$   
 $d = 10 \text{ m}$   
 $T = 120 \text{ seg}$   
 $g = 9.81 \text{ m/s}^2$   
 $P = \frac{(130)(9.81)(10)}{120} = 106.275 \text{ W}$

18  
 $m = 17,658$   
 $d = 300$   
 $T = 30 \text{ in}$   
 $17,658 \times 300 = 5,297,400$   
 $\frac{5,297,400}{180} = 29,430 \text{ W}$

Datos  
 20  
 $d = 10 \text{ m}$   
 $T = 60 \text{ seg}$   
 $g = 9.81 \text{ m/s}^2$   
 $106.275 = 212.65 \text{ W}$   
 $0.212 \text{ Kw}$   
 $0.281 \text{ CV}$

21  
 $m = 2 \text{ Kg}$   
 $g = 10 \text{ m/s}^2$   
 $d = 3 \text{ m}$   
 $F = (2)(10)$   
 $F = 20 \text{ N}$   
 $EP (2 \text{ Kg})(10 \text{ m/s}^2)(3)$   
 $EP = 60 \text{ J}$   
 $T = (2)(3)$   
 $T = 60 \text{ J}$