

Actividad #7.

1. $T = 24 \times 3600$

$$v = \frac{2\pi R}{T} \quad v = \frac{2\pi (6400 \text{ km})}{24 \text{ h}}$$

$$v = \frac{1,600}{3} \pi \text{ km/h}$$

2. (Sol: $7,26 \cdot 10^{-5} \text{ rad/s}$)

3. $\omega = v/R$ $90 \text{ km/h} = 90 \cdot 1000 / 3600$
 $= 25 \text{ m/s}$

$$25 / 1.14 = 17.85 \text{ rad/s}$$

4. Frecuencia: $2000 \text{ rev/min} = 33.333 \text{ rev/seg}$

$$\omega = 2\pi \cdot 33.333 \text{ rev/seg}$$

$$\omega = 209.437 \text{ rad/seg} = 11999.856^\circ/\text{s}$$

$$\text{Velocidad angular} = 12000^\circ/\text{s}$$

6.

$$\omega = 35.4 \text{ rad/sec}$$

$$R = 1.2 \text{ m}$$

$$v = ? \quad v = \omega R = 35.4 \text{ rad/sec} \times 1.2 \text{ m} \\ = 42.48 \text{ m/s}$$

7.

$$\text{ang } \omega = 2 \text{ rad}$$

$$T = 0.25 \text{ sec}$$

$$r = 30 \text{ cm} = 0.3 \text{ m}$$

$$\omega = 2 \text{ rad} / 0.25 \text{ sec}$$

$$\omega = 8 \text{ rad/sec}$$

$$v_t = 8 \text{ rad/sec} \times 0.3 \text{ m}$$

$$n = 2 \text{ rad} / 2\pi \text{ rad}$$

$$f = \frac{\pi \text{ rad}}{0.25 \text{ sec}}$$

$$8. f = 400 \text{ vueltas} / 300 \text{ s} = 1,33 \text{ v/s}$$

$$T = 300 \text{ s} / 400 \text{ v} = 0,75 \text{ s}$$

$$\omega = 400 \text{ rev} \cdot 2\pi \text{ rad/rev} / 300 \text{ s} = 8,34 \text{ rad/s}$$

$$v = \omega R = 8,34 \text{ rad/s} \cdot 0,5 \text{ m} = 4,17 \text{ m/s}$$