

7 - M.C.U.

a)

$$\omega = \frac{5 \text{ vueltas}}{4'116 \text{ s}} = 1'215 \frac{\text{vueltas}}{\text{s}} \cdot \frac{2\pi \text{ rad}}{1 \text{ vuelta}} = 2'43 \pi \text{ rad/s}$$

b) $R = 12 \text{ cm}$; $v = \omega \cdot R \rightarrow v = \left(2'43 \pi \frac{\text{rad}}{\text{s}} \right) \cdot (0'12 \text{ m})$

$$v = 0'29 \pi \text{ m/s}$$

b.2.) $R = 5 \text{ cm}$; $v = \omega \cdot R = \left(2'43 \pi \frac{\text{rad}}{\text{s}} \right) \cdot (0'05 \text{ m})$

$$v = 0'12 \pi \text{ m/s}$$

c) $\Delta\phi = 135^\circ$; $\omega = \frac{\Delta\phi}{\Delta t} \rightarrow \Delta t = \frac{\Delta\phi}{\omega}$

$$\Delta t = \frac{0'75 \pi \text{ rad}}{2'43 \pi \frac{\text{rad}}{\text{s}}} = 0'3 \text{ s} \rightarrow \boxed{\Delta t = 0'3 \text{ s}}$$

$$135^\circ \cdot \frac{2\pi \text{ rad}}{360^\circ} = 0'75 \pi \text{ rad}$$