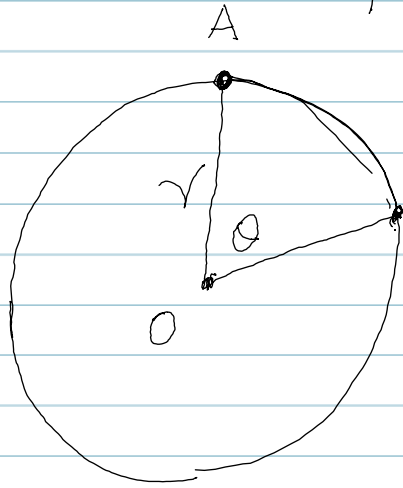


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一旋轉木馬以穩定的速率每20秒轉一圈。若轉了10分鐘求它的(1)角位移(2)平均角速度(3)木馬距中心10公尺處的切線速率(4)若木馬距中心5公尺，其切線速率是10公尺處的幾倍？



$$\theta = \frac{s}{r} = \frac{2\pi r}{r}$$

$$= 2\pi n$$

$$\omega = \frac{\theta}{t} = \frac{2\pi}{T} = 2\pi f$$

$$v = r \times \omega$$

(1)

$$\theta = 2\pi \times n = 2\pi \times 30 = 60\pi = 188.5 \text{ (rad)}$$

$$n = \frac{10 \times 60}{20} = 30$$

$$(2) \quad \omega = \frac{\theta}{t} = \frac{60\pi}{10 \times 60} = \frac{\pi}{10} = 0.314 \text{ (rad/s)}$$

$$= 2\pi \times \frac{1}{20} = \frac{\pi}{10} = 0.314 \text{ (rad/s)}$$

$$(3) \quad v = r \times \omega = 10 \times 0.314 = 3.14 \text{ (m/s)}$$

$$(4) \quad \frac{v'}{v} = \frac{5}{10} = \frac{1}{2}$$