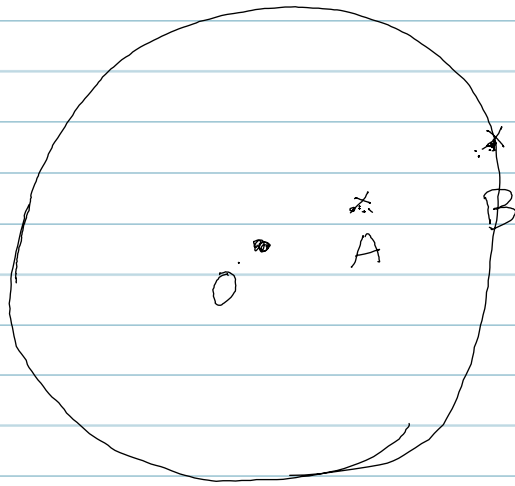


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摩天輪在轉動時，若離開軸心 1 公尺處的人，瞬時速度為 $0.6 \frac{\text{公尺}}{\text{秒}}$ ，切線加速度為 $1 \frac{\text{公尺}}{\text{秒}^2}$ 。試求另一端距軸心 5 公尺的人，其速率及加速度的大小？



$$V = \omega \times r$$

$$0.6 = \omega \times 1$$

$$\omega = 0.6 \frac{\text{rad}}{\text{s}}$$

$$a_T = r \times \alpha$$

$$1 = 1 \times \alpha$$

$$\alpha = 1 \frac{\text{rad}}{\text{s}^2}$$

$$V' = 5V = 5 \times 0.6$$

$$= 3 \left(\frac{\text{公尺}}{\text{秒}} \right)$$

$$a_T = 5 \times a_T$$

$$= 5 \times 1 = 5 \frac{\text{公尺}}{\text{秒}^2}$$

$$a_c = r \times \omega^2 = 5 \times 0.6^2$$

$$= 1.8 \left(\frac{\text{公尺}}{\text{秒}^2} \right)$$

$$a = \sqrt{a_c^2 + a_T^2} = \sqrt{1.8^2 + 5^2} = 5.3 \frac{\text{公尺}}{\text{秒}^2}$$