

$$\text{J1 } a_{\text{tr}} = \frac{v^2}{R} = 32$$

$$a = \sqrt{32^2 + 4} \approx 5.1$$

$$3. r = 0.1 \text{ m}$$

$$\varphi = 3 + 2t + t^3$$

Hitung :  $a_n, a_{\text{tr}}, a$

$$\omega = \frac{d\varphi}{dt} = 2 + 3t^2$$

$$v = \omega r = 0.2 + 0.3t^2$$

$$a = \frac{dv}{dt} = 0.6t$$

Kerna  $t = 10 \text{ s}$ :

$$a_{\text{tr}} = 6 \text{ m/s}^2$$

$$v = 30.2$$

$$a_n = \frac{v^2}{r} \approx 912 \text{ m/s}^2$$

$$a = \sqrt{a_{\text{tr}}^2 + a_n^2} \approx 912 \text{ m/s}^2$$