

Solutions

Each answer shows the steps, then the **result**.

2.1

- Zero (constant ω)

2.2

- $\omega = \omega_0 + \alpha t = 0 + 2(5) = 10 \text{ rad s}^{-1}$

2.3

- $2\pi \text{ rad}$

2.4

- $\omega = 10 + (-2)(3) = 4 \text{ rad s}^{-1}$

3.1 B

- angular acceleration

3.2 A

- $\alpha = 20/4 = 5 \text{ rad s}^{-2}$

3.3

(a)

- $\omega = 4(3) = 12 \text{ rad s}^{-1}$

(b)

- $\theta = \frac{1}{2}(4)(3)^2 = 18 \text{ rad}$

3.4

(a)

- $\alpha = (0 - 30)/6 = -5 \text{ rad s}^{-2}$

(b)

- Negative — it is decelerating (slowing the spin)