Solutions

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

2.1

- $L = I\omega = 5 \times 4 = 20$ kg m^2 s^{-1}

2.2

- kg m^2 s^{-1}

2.3

- $\Delta L = \tau\,\Delta t = 3 \times 5 = 15$ kg m^2 s^{-1}

2.4

- $L = mvr = 2 \times 3 \times 4 = 24$ kg m^2 s^{-1}

3.1 B

- angular momentum is the rotational analogue of linear momentum

3.2 B

- $L = I\omega$

3.3

(a)

- $L_i = 2 \times 3 = 6$ kg m^2 s^{-1}

(b)

- $\Delta L = 2 \times 4 = 8$; $L_f = 6 + 8 = 14$ kg m^2 s^{-1}

3.4

(a)

- $L = 4 \times 2 = 8$ kg m^2 s^{-1}

(b)

- Angular momentum ($\tau = dL/dt$)