

Solutions

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

2.1

- $W = \tau\theta = 6 \times 4 = 24 \text{ J}$

2.2

- $P = \tau\omega = 8 \times 5 = 40 \text{ W}$

2.3

- The change in its rotational kinetic energy

2.4

- Radians

3.1 B

- $W = \tau\theta$

3.2 B

- $P = \tau\omega$ mirrors $P = Fv$

3.3

(a)

- $W = 10 \times 3 = 30 \text{ J}$

(b)

- $P = W/t = 30/2 = 15 \text{ W}$

3.4

(a)

- $\Delta K_{rot} = 50 \text{ J}$

(b)

- $\frac{1}{2}I\omega^2 = 50 \Rightarrow \omega = \sqrt{100/4} = 5 \text{ rad s}^{-1}$