Solutions

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

2.1

- $W = \tau\,\Delta\theta = 5.0 \times 4.0 = 20$ J

2.2

- $P = \tau\omega = 20 \times 15 = 300$ W

2.3

- 30 J (all the net work becomes rotational kinetic energy)

3.1 B

3.2 B

3.3

(a)

- $W = \tau\,\Delta\theta = 2.0 \times 10 = 20$ J

(b)

- $\frac{1}{2}I\omega^2 = 20 \Rightarrow \omega = \sqrt{\dfrac{2(20)}{0.40}} = 10$ rad s^{-1}