

Solutions

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

2.1

- $I = mr^2 = 3 \times 2^2 = 12 \text{ kg m}^2$

2.2

- An object's resistance to a change in its rotation

2.3

- $I = 1(1)^2 + 1(2)^2 = 1 + 4 = 5 \text{ kg m}^2$

2.4

- Four times (r is squared)

3.1 B

- mass and its distribution about the axis

3.2 B

- mr^2

3.3

(a)

- $I = 4(1.5)^2 + 2(3)^2 = 9 + 18 = 27 \text{ kg m}^2$

(b)

- The 2 kg mass, because it is farther out (r^2 dominates)

3.4

(a)

- The ring

(b)

- All the ring's mass is at the rim (maximum r), while the disc's mass is spread inward, lowering its I