1.

$$I = \int_0^{2\pi} r^2.10d\theta = 10.r^2\,.\theta|_0^{2\pi} = 270\pi kg.m^2$$

$$I = \int_0^3 90\pi dr = 90\pi.r_0^3 = 270\pi kg.m^2$$

2.

$$I = \int_2^4 \int_0^{2\pi} r^2.5d\theta dr$$

$$I = \ 20\pi kg.m^2$$

3.

$$I = \int_0^2 \int_0^{2\pi} r^2(k.r).5d\theta dr$$

$$I = \int_0^{2\pi} r^2.(k.r)\,d\theta = 2\pi.k.r^3$$

$$I = \int_0^2 2\pi.k.r^3 dr = 16\pi k$$

4.

$$I = \int_0^5 \int_0^{\pi} r^2.8.d\theta dr$$

$$I = 40\pi.kg.m^2$$

5.

$$I = \int_2^6 \int_0^{2\pi} r^2.12.d\theta dr$$

$$I = 320\pi.kg.m^2$$