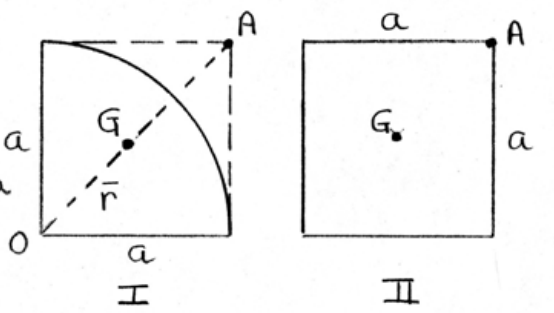
B/32



$I_A = I_{A_{II}} - I_{A_I}$

Let ρ = mass/unit area

For II:

$$I_A = I_G + m\left(\frac{a}{\sqrt{2}}\right)^2 = \frac{1}{6}ma^2 + \frac{1}{2}ma^2 = \frac{2}{3}ma^2$$
$$= \frac{2}{3}(\rho a^2)a^2 = 0.667\rho a^4$$

For I:

$$I_O = \frac{1}{2}ma^2, \quad I_G = I_O - m\bar{r}^2 = \frac{1}{2}ma^2 - m\left(\frac{4a}{3\pi}\sqrt{2}\right)^2$$
$$= 0.1397ma^2$$
$$I_A = I_G + m\left(a\sqrt{2} - \frac{4a}{3\pi}\sqrt{2}\right)^2 = 0.802ma^2$$
$$= 0.802\left(\frac{1}{4}\pi a^2\rho\right)a^2 = 0.630\rho a^4$$

So overall, $I_A = 0.667\rho a^4 - 0.630\rho a^4$
$$= 0.0365\rho a^4$$

But $m = \rho\left(a^2 - \frac{1}{4}\pi a^2\right) = 0.215\rho a^2$

So $I_A = 0.0365\rho a^4\left(\frac{m}{0.215\rho a^2}\right) = \underline{0.170ma^2}$