7.23. Find the centre of mass of a uniform
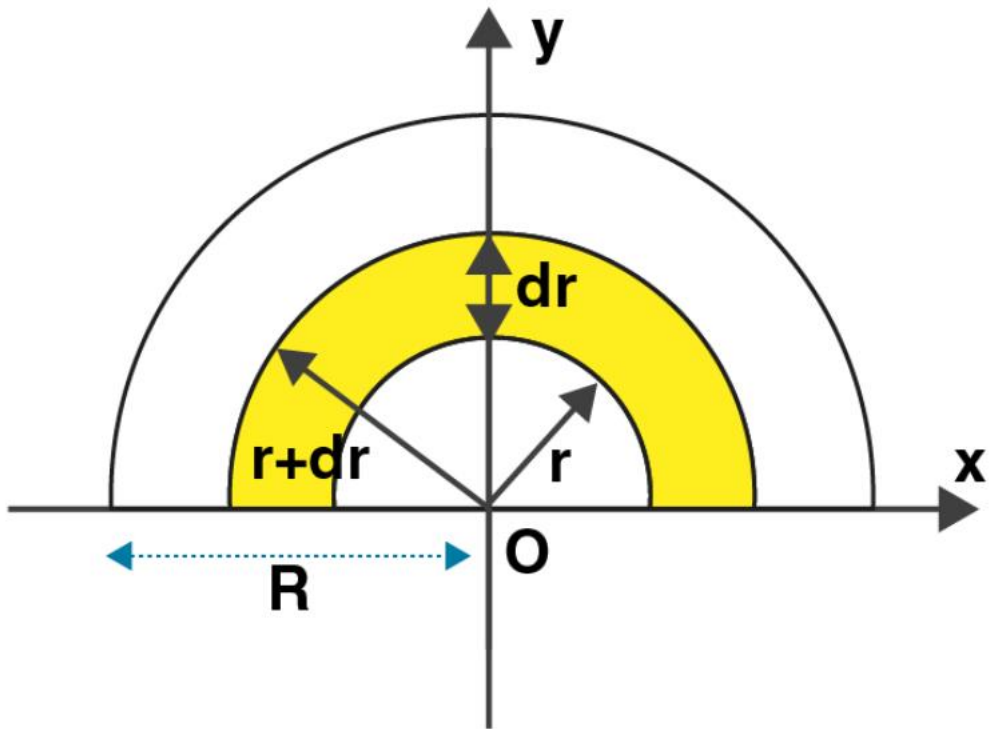
a) half-disc

b) quarter-disc

Answer:

Answer

Let M be the mass of the half-disc

Area of the half-disc = $\pi R^2/2$

Mass per unit area m = $2M/\pi R^2$

a) when the disc is half, the centre of mass is $(0, 4R/3\pi)$

b) when the disc is quarter, the centre of mass is $(4R/3\pi, 4R/3\pi)$