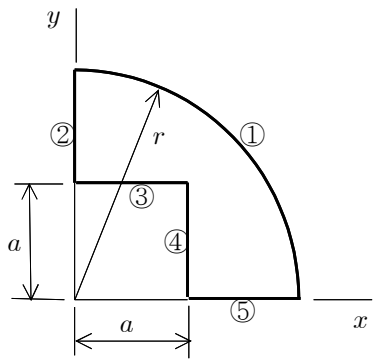
[5.1절]

5.26　r = 10 cm,　a = 5 cm,　대칭 $\overline{X} = \overline{Y}$



① 1/4 원호

$L = \frac{1}{4}(2\pi r) = \frac{1}{2}\pi$ (10 cm) = 15.708 cm

$\bar{x} = \frac{2}{\pi} r = \frac{2}{\pi}$ (10 cm) = 6.366 cm

$\bar{x} L = (\frac{2}{\pi} r)(\frac{\pi}{2} r) = r^2$

② $L = r - a$ = (10 cm) − (5 cm) = 5 cm

$\bar{x} = 0$

③ $L = a$ = 5 cm

$\bar{x} = \frac{1}{2} a = \frac{1}{2}$ (5 cm) = 2.5 cm

④ L = 5 cm

$\bar{x} = a$ = 5 cm

⑤ L = 5 cm

$\bar{x} = \frac{1}{2}(r - a) + a = \frac{1}{2}(r + a) = \frac{1}{2}$[(10 cm)+(5 cm)] = 7.5 cm

ΣL = 15.708 + 5 + 5 + 5 + 5 cm = 35.708 cm

$\Sigma(\bar{x} L)$ = $(10)^2$ + (5)(0) + (5)(2.5) + (5)(5) + (5)(7.5) cm^2 = 175 cm^2

$\overline{X} = \frac{\Sigma(\bar{x} L)}{\Sigma L} = \frac{175\ cm^2}{35.708\ cm}$ = 4.901 cm　　⇒　　무게중심 = (4.90 cm, 4.90 cm)