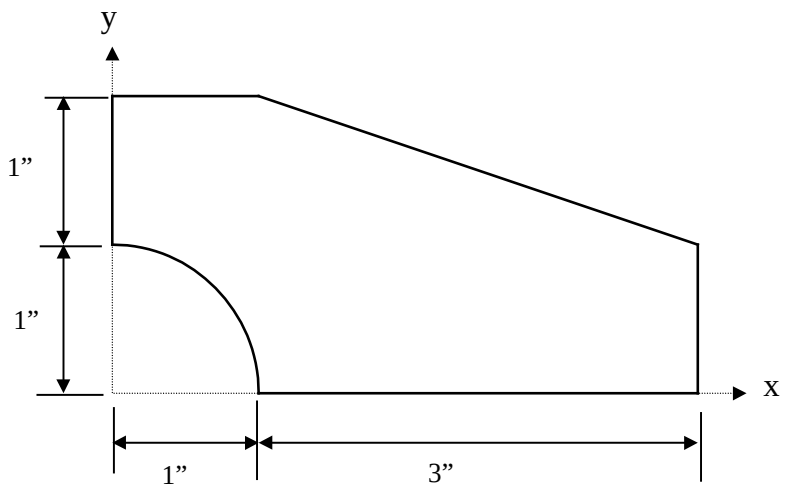
Centroid

Locate the centroid of the shape shown below. Use the 'x-y' system provided as your reference system.



SHAPE	AREA (in^2)	$\bar{x}$ (in)	$m_y = \bar{x}A$ (in^3)	$\bar{y}$ (in)	$m_x = \bar{y}(A)$ (in^3)
2" + 4"	8	2	16	1	8
3" − 1"	−1.5	3	−4.5	5/3	−2.5
1" − 1"	$\frac{-\pi}{4}$	$\frac{4}{3\pi}$	$\frac{-1}{3}$	$\frac{4}{3\pi}$	$\frac{-1}{3}$
	$\Sigma = 5.714$		11.17		5.167

$$\bar{X} = \frac{\Sigma \bar{x}A}{\Sigma A} = \frac{11.17}{5.714} = 1.955 \text{ in} \qquad \bar{y} = \frac{\Sigma \bar{y}A}{\Sigma A} = \frac{5.167}{5.714} = 0.904 \text{ in}$$