

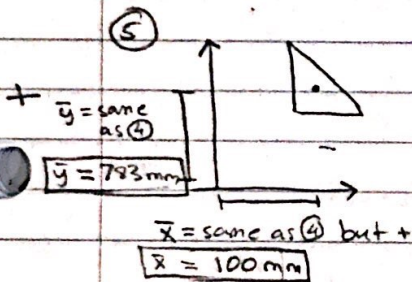
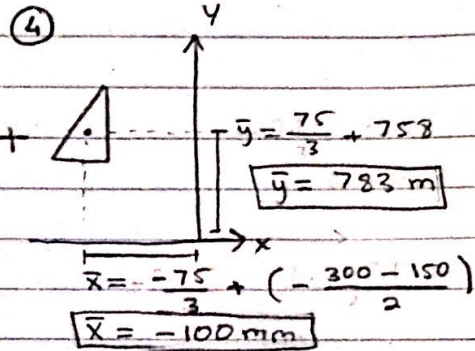
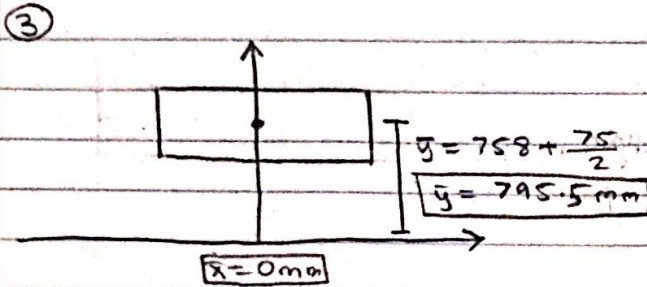
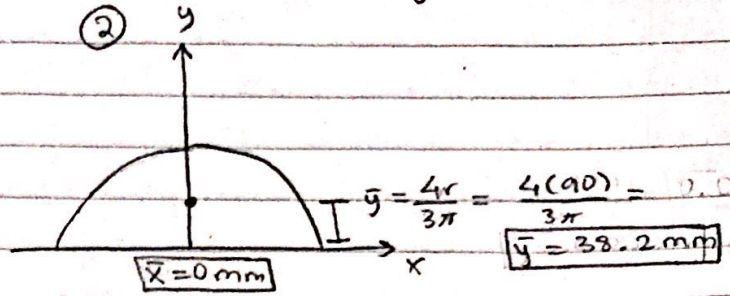
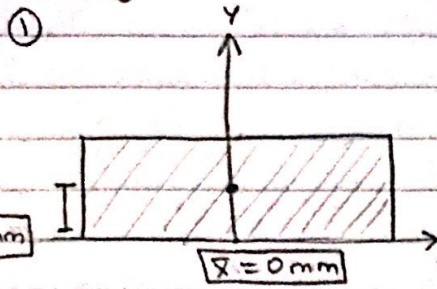
$$\tan 45^\circ = \frac{75}{x}$$

$$x = 75 \text{ mm}$$

Assignment # 4

last 3 digits = 758

Q1)



shape	Area	\bar{x}	\bar{y}	$\bar{x}A$	$\bar{y}A$
1	300×758 $= 227400$	0	379	0	86184600
2	$\frac{\pi(75)^2}{2}$ $= -12723.5$	0	38.2	0	-486037.7
3	150×75 $= 11250$	0	795.5	0	8949375
4	$(75 \times 75)/2$ $= 2812.5$	-100	783	-281250	2202187.5
5	$(75 \times 75)/2$ $= 2812.5$	100	783	281250	2202187.5
Σ	$= 231551.5$	Σ	Σ	0	99052312.3

$$\bar{x} \Sigma A = \Sigma \bar{x}A \Rightarrow \bar{x} = \frac{\Sigma \bar{x}A}{\Sigma A} = \frac{0}{231551.5} = 0 \text{ mm or } 0 \text{ m} \leftarrow x \text{ centroid}$$

$$\bar{y} \Sigma A = \Sigma \bar{y}A \Rightarrow \bar{y} = \frac{\Sigma \bar{y}A}{\Sigma A} = \frac{99052312.3}{231551.5} = 427.78 \text{ mm or } 0.42778 \text{ m} \uparrow y \text{ centroid}$$