T4. Determine second moment of area about horizontal and vertical centroidal axes.

300mm

300mm

200

200mm

900mm
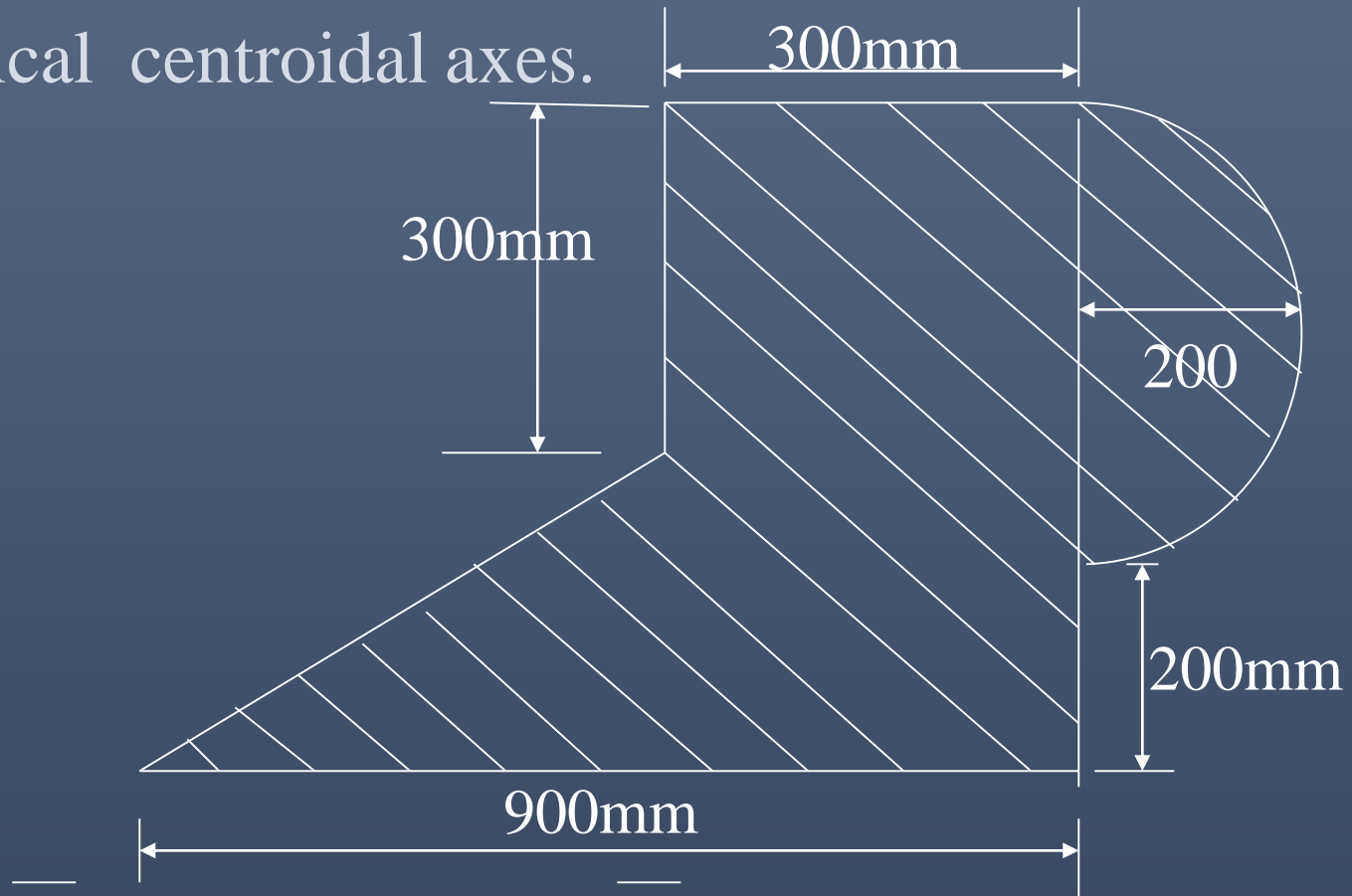
[Ans: X = 99.7mm from A, Y = 265 mm
I_{xx} = 10.29 x 10^9mm^4, I_{yy} = 16.97 x 10^9mm^4]

TUTORIAL – 7
(Additional problems)

1. Determine the second moment of area for the hatched portion shown in figure with respect to given reference axis AB. (3 marks)
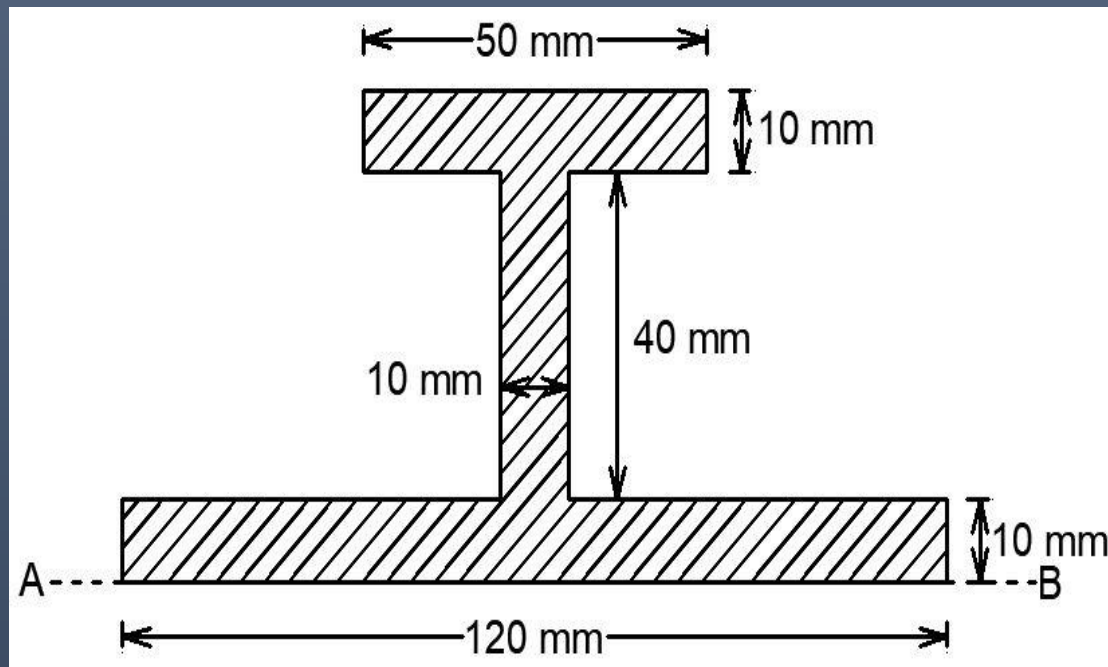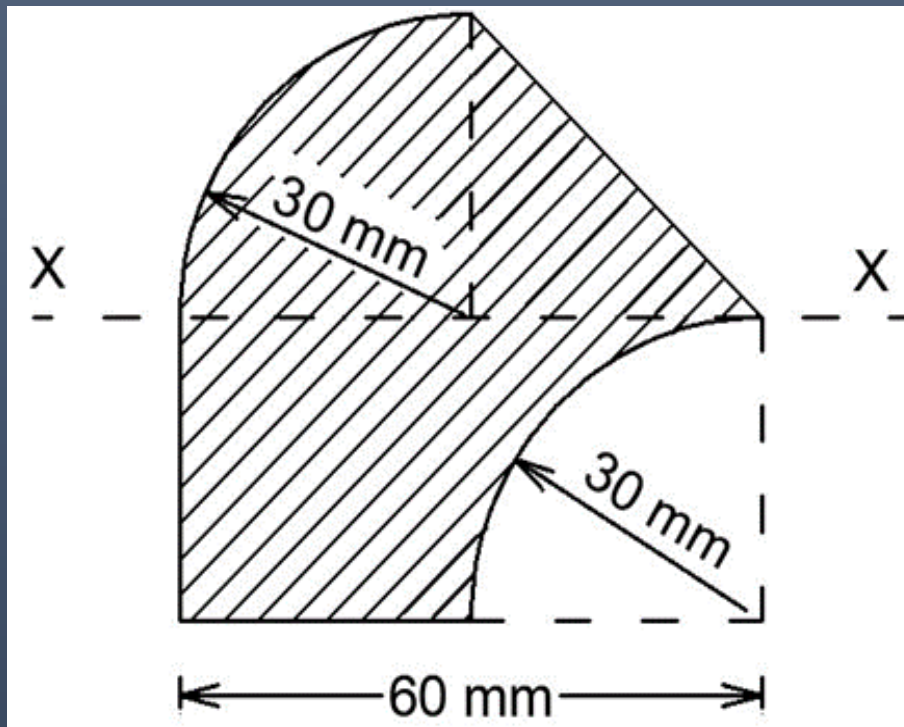
2. Determine moment of inertia of the shaded area shown in figure with respect to the given reference axis AB.5 marks)
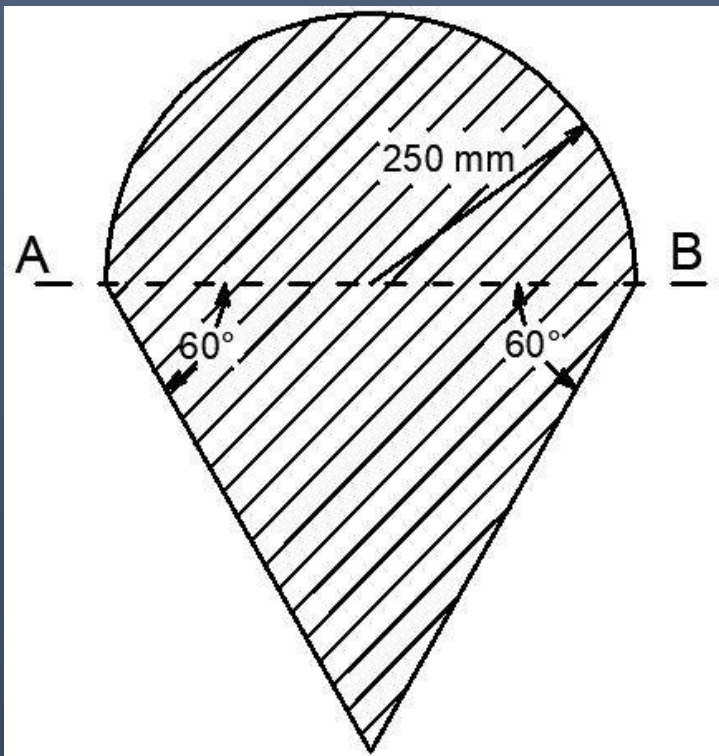
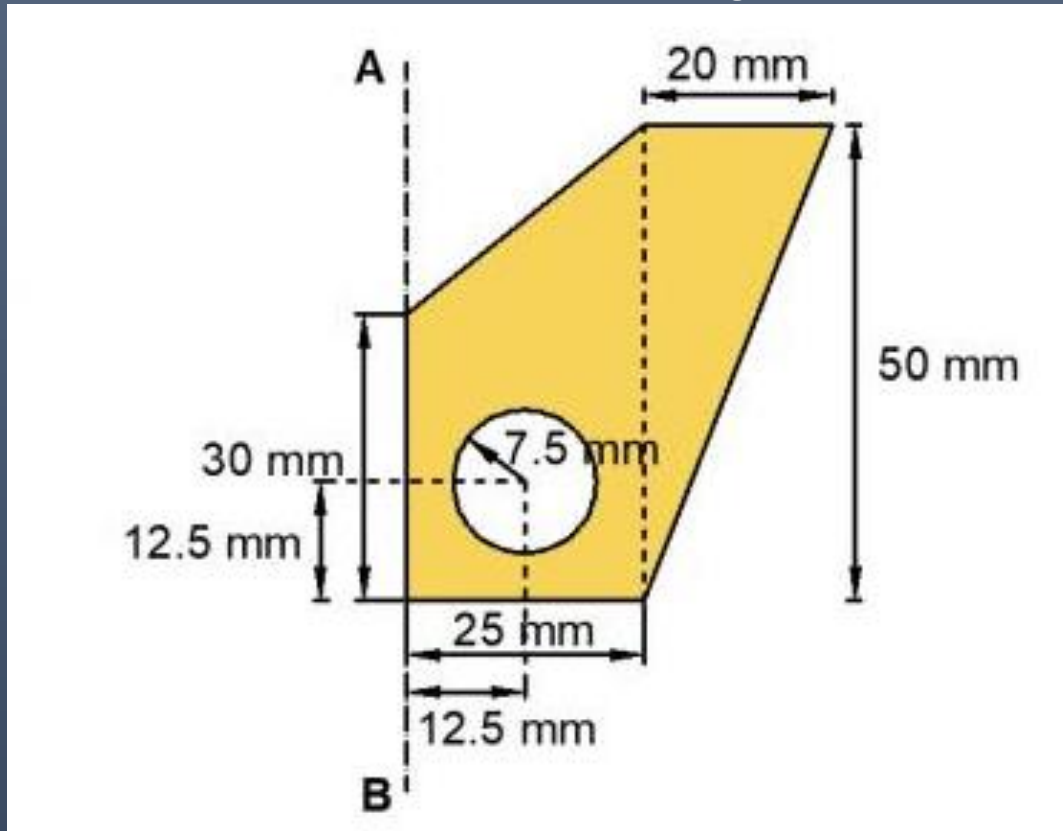
Ans: $4.995 \times 10^6 \text{mm}^4$

3. Determine the second moment of area for the shaded area shown in the figure w.r.t given axis X-X.
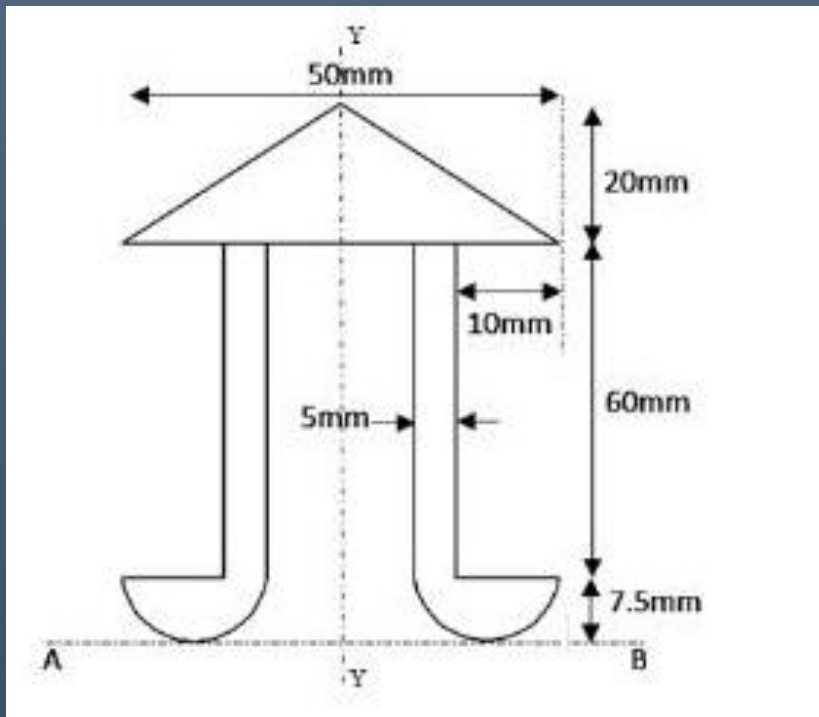.5 marks)

Ans: $5.113 \times 10^5 \text{mm}^4$

4. Determine the second moment of area with respect to given reference axis AB for the shaded region.

Ans: I_{AB} = 716778.3 mm^4

5. Determine the second moment of area for the figure shown below w.r.t given axis AB.

Ans: I_{AB} = 3.7892 X 10^6 mm^4