ENGINEERING MECHANICS - STATICS

Rashmi B A

Department of Civil Engineering

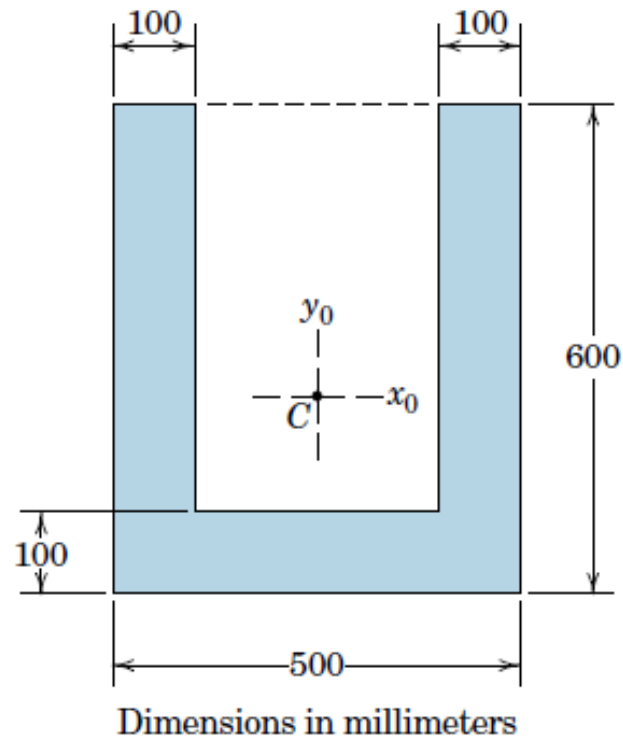# ENGINEERING MECHANICS - STATICS
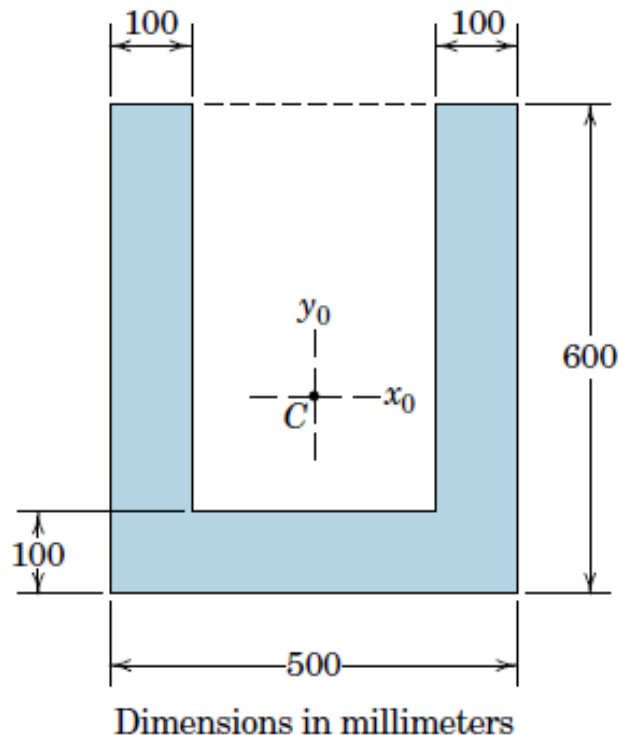
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Problem A/60. Calculate the polar radius of gyration of the shaded area about its centroid C.

Dimensions in millimeters

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Dimensions in millimeters

Solution:

Due to symmetry $\quad \bar{x} = 250 \; mm$

$$\bar{y} = \frac{\sum a_i y_i}{A} = 250 \; mm$$

$$I_{x_o} = 51.26 \times 10^8 \; mm^4$$

$$I_{y_o} = 51.26 \times 10^8 \; mm^4$$

$$I_{z_o} = 102.52 \times 10^8 \; mm^4$$

$$A = 150000 \; mm^2$$

$$\boxed{K_z = \sqrt{I_z/A} = 261.43 \; mm}$$

THANK YOU

Rashmi B A
Department of Civil Engineering

rashmiba@pes.edu