Today’s Objective:
   a) Determine product of inertia of an area

Product of Inertia for an area
Moment of Inertia for an area is different for every axis
Sometimes, we need to find the orientation of axes which gives $I_{\text{max}}$

$I_{\text{max}}$ depends on $I_x$, $I_y$ and $I_{xy}$ [product of Inertia]

General Rule:
If either x or y axis is an axis of symmetry for the area THEN $I_{xy}=0$

Product of Inertia for a Composite area
Using the parallel-axis theorem, the Product of Inertia for a composite area can easily be calculated.

For right angle triangles: $I_{xy}=bh^2/8$

Example
Example

![Diagram of a shape with dimensions labeled: 3 in., 3 in., 6 in., 4 in., 2 in.]}