Example 2.2.5

Figure 1 shows the cross-section of an extrusion profile which consists of a square outline and one circular 'cavity' as shown. Note that the cavity is not completely centred with respect to the cross-section. About which of the axes, *y* or *z*, does this cross-section offer the lowest second moment of area? Prove it by calculating both values. (NB. the origins of *y* and *z* should denote the unknown centroid of the cross-section.)

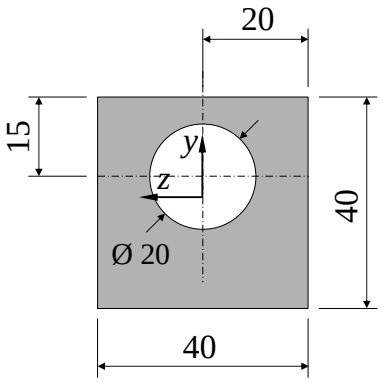

Figure 1: Cross-section of an extruded profile (dimensions in millimetres).