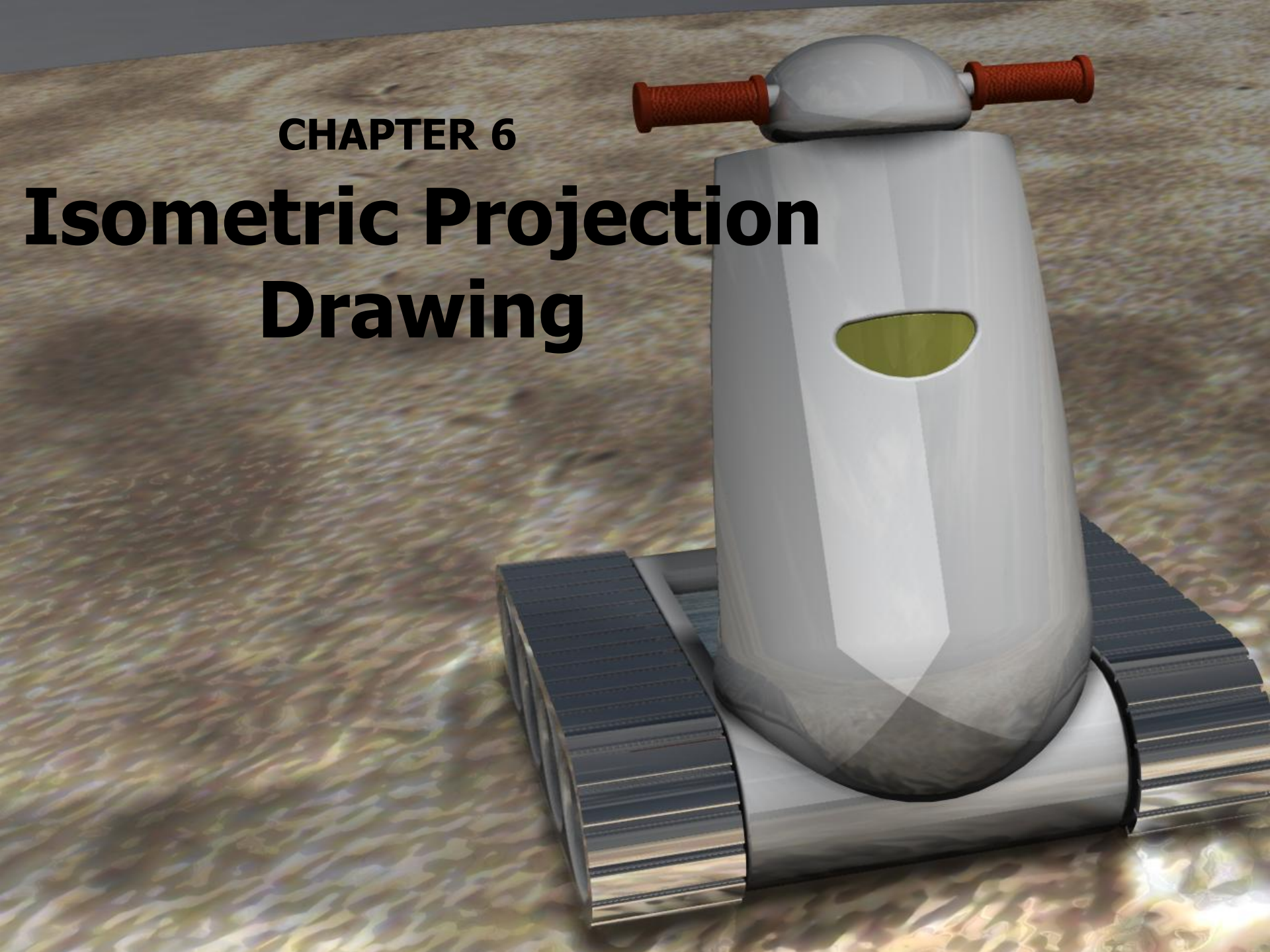


CHAPTER 6

Isometric Projection Drawing

6.1 Isometric projection

- Isometric projection is a true representation of the isometric view of an object
- Isometric view is created by rotating the object 30 degree about horizontal axis.

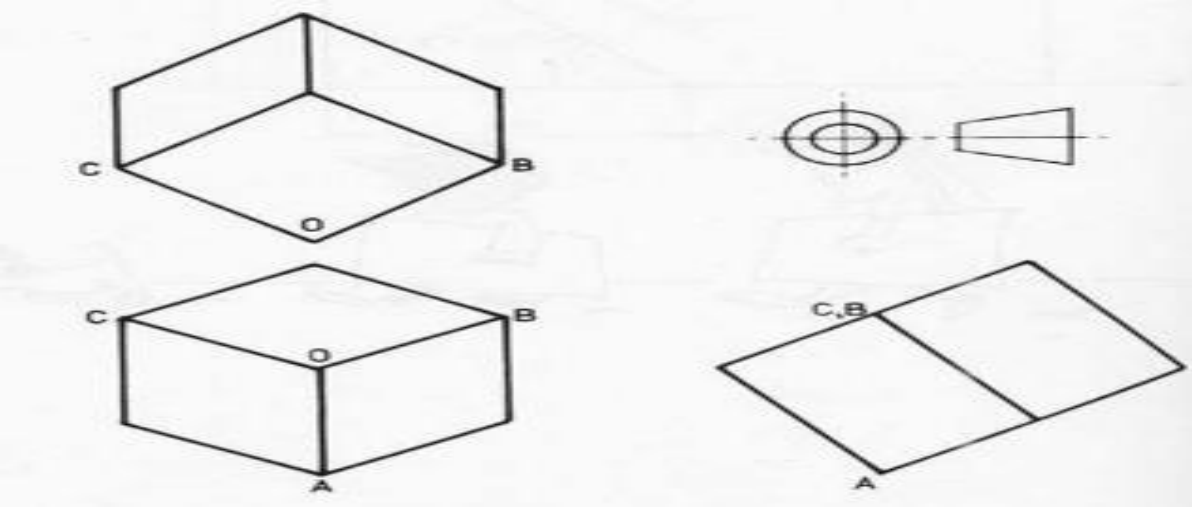
6.2 Isometric projection: axes

.The 3 axis meet at A,B form equal angles of 120 deg and they are called Isometric Axes

.OA is vertical, OB is inclined at 30 degree to the right, OC is inclined at 30 degree to the left

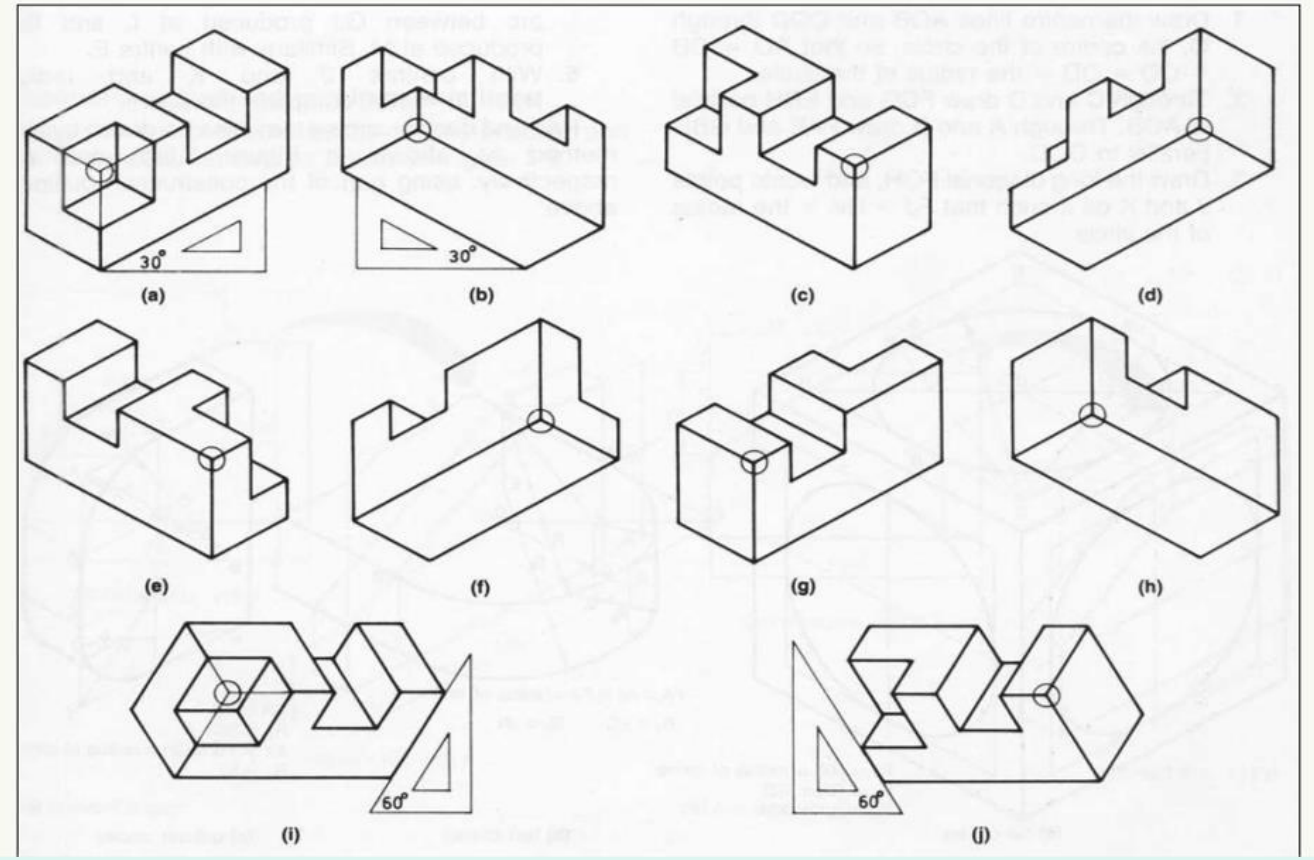
.Any lines parallel to these – Isometric Line

.Any planes parallel – Isometric Planes



6.2 Selection of Isometric Axes

- Main purpose of isometric view is to provide a pictorial view which reveals as much detail as possible
- Selection of principal edges is important
- Figure shows different isometric views of the same block



6.2 Iso-lines & Iso-planes: examples

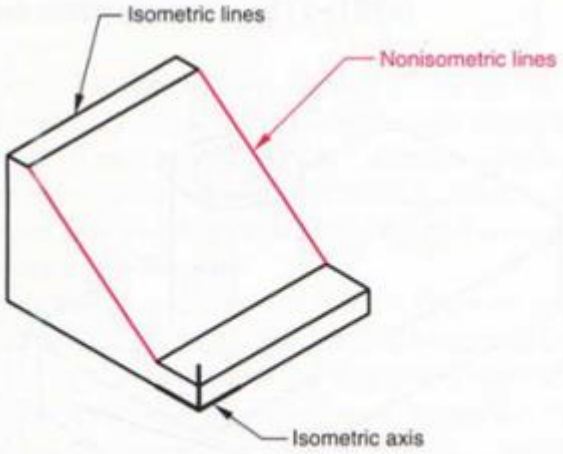


Figure 7.10
Isometric and nonisometric lines

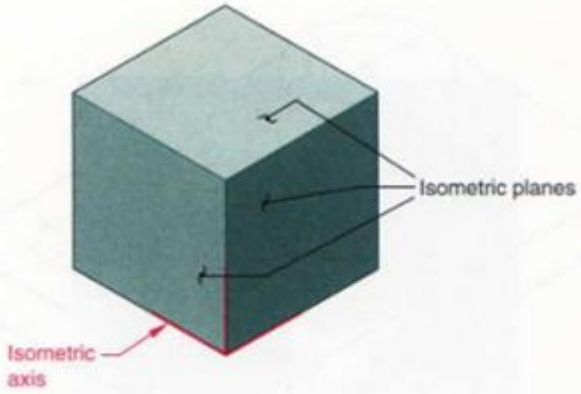


Figure 7.11
Isometric planes relative to isometric axes

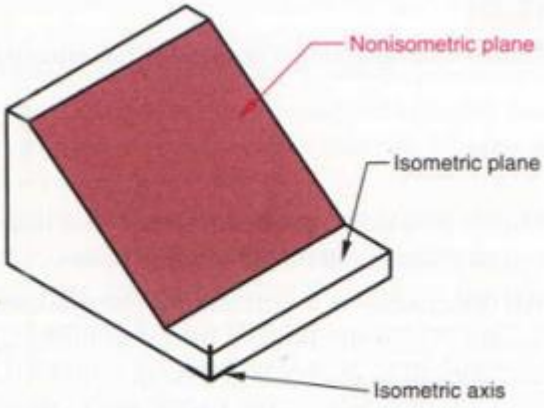
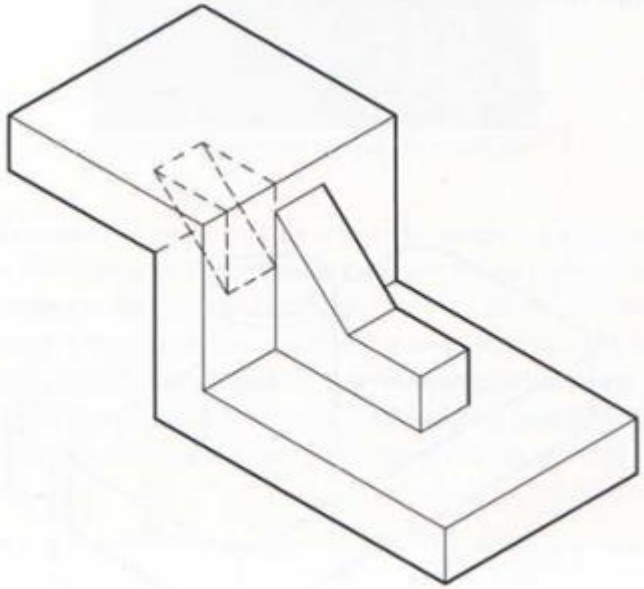
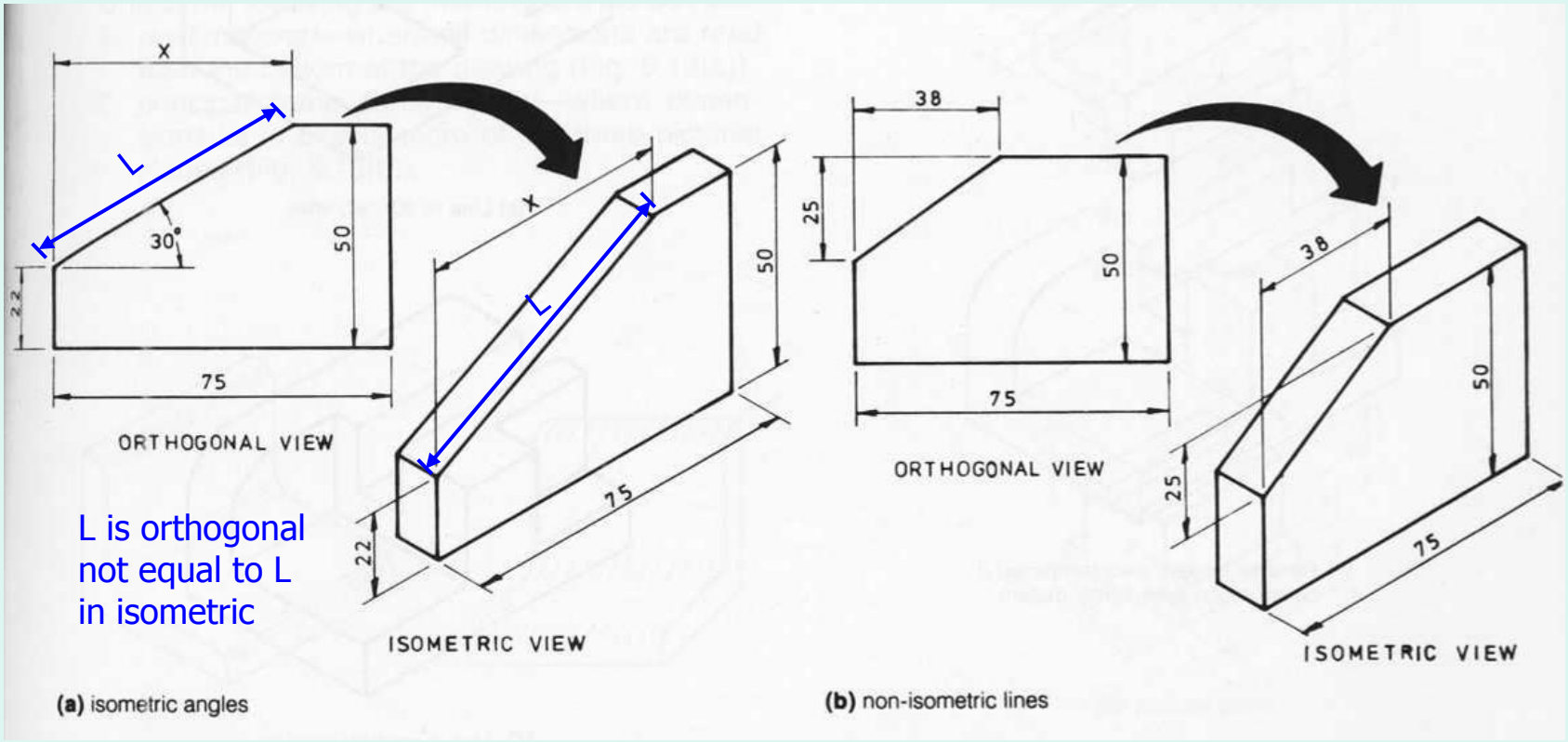


Figure 7.12
Nonisometric plane



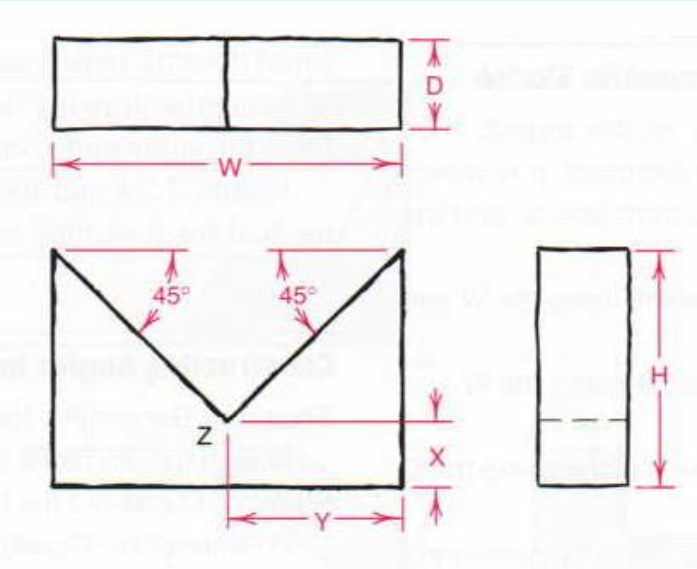
6.3 Non-isometric lines

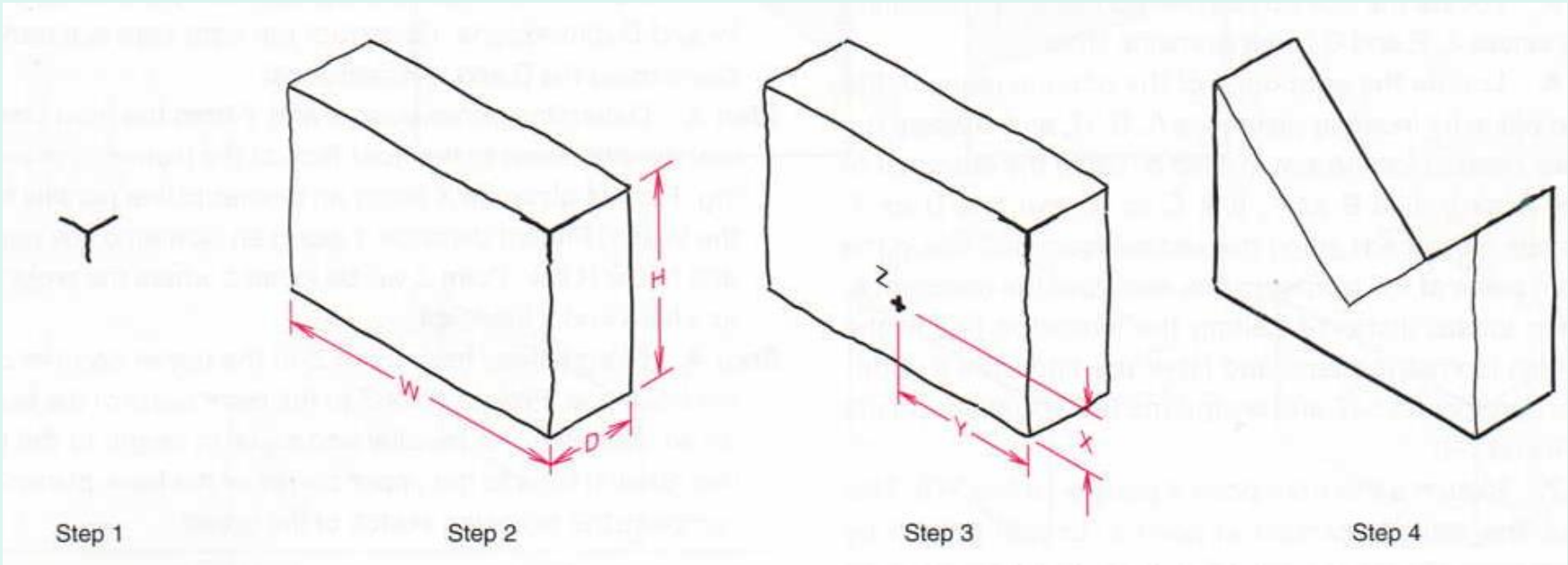
- **Non-isometric lines are the lines that are not parallel to any of the iso-lines.**
- **They are drawn by transferring the distance of X or Y from multi-view to iso-view.**



6.3 Isometric angles & non-iso lines

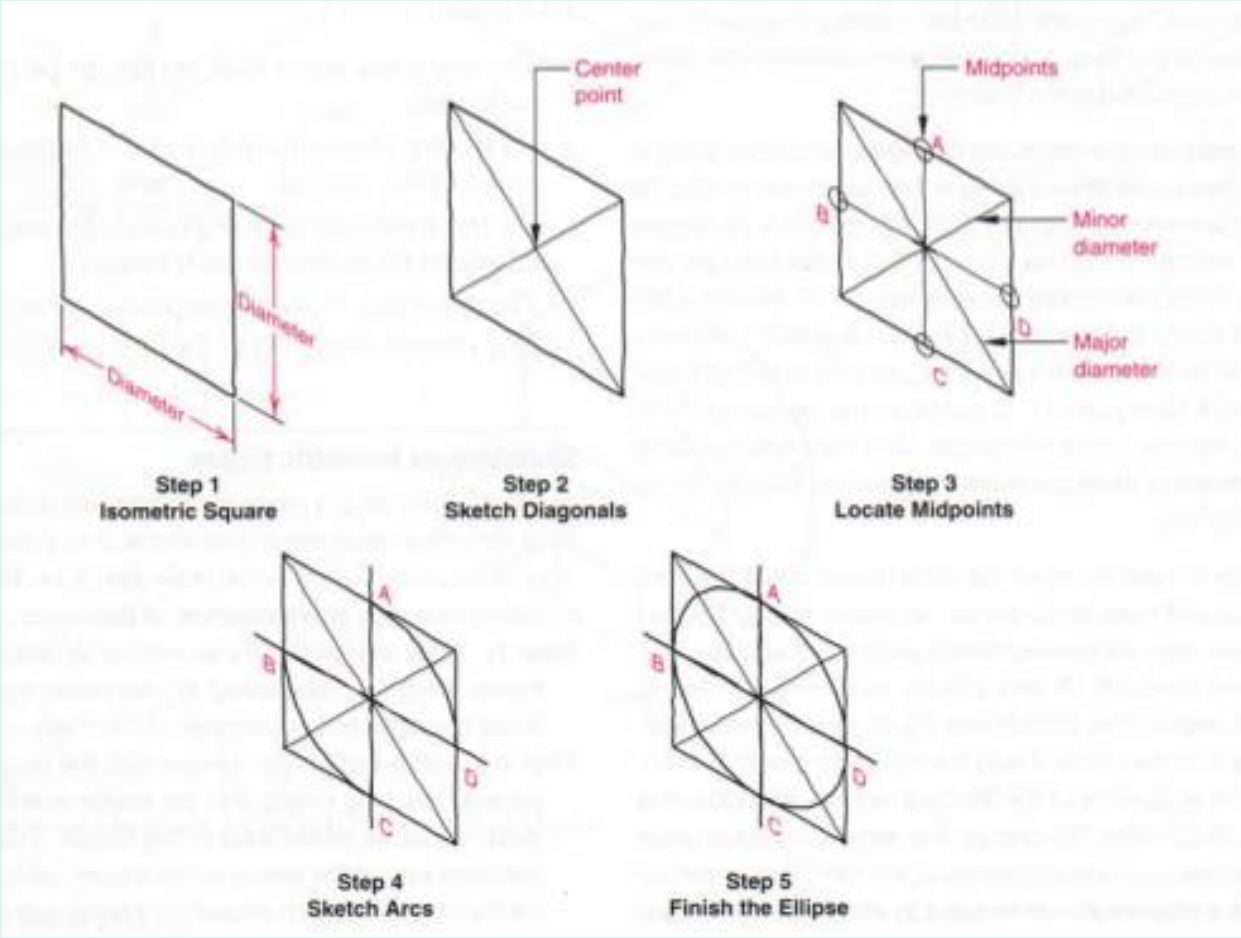
- **Example of producing non-isometric lines.**
- **The position of point Z is obtained in the isometric view, by transferring the distance of X and Y.**





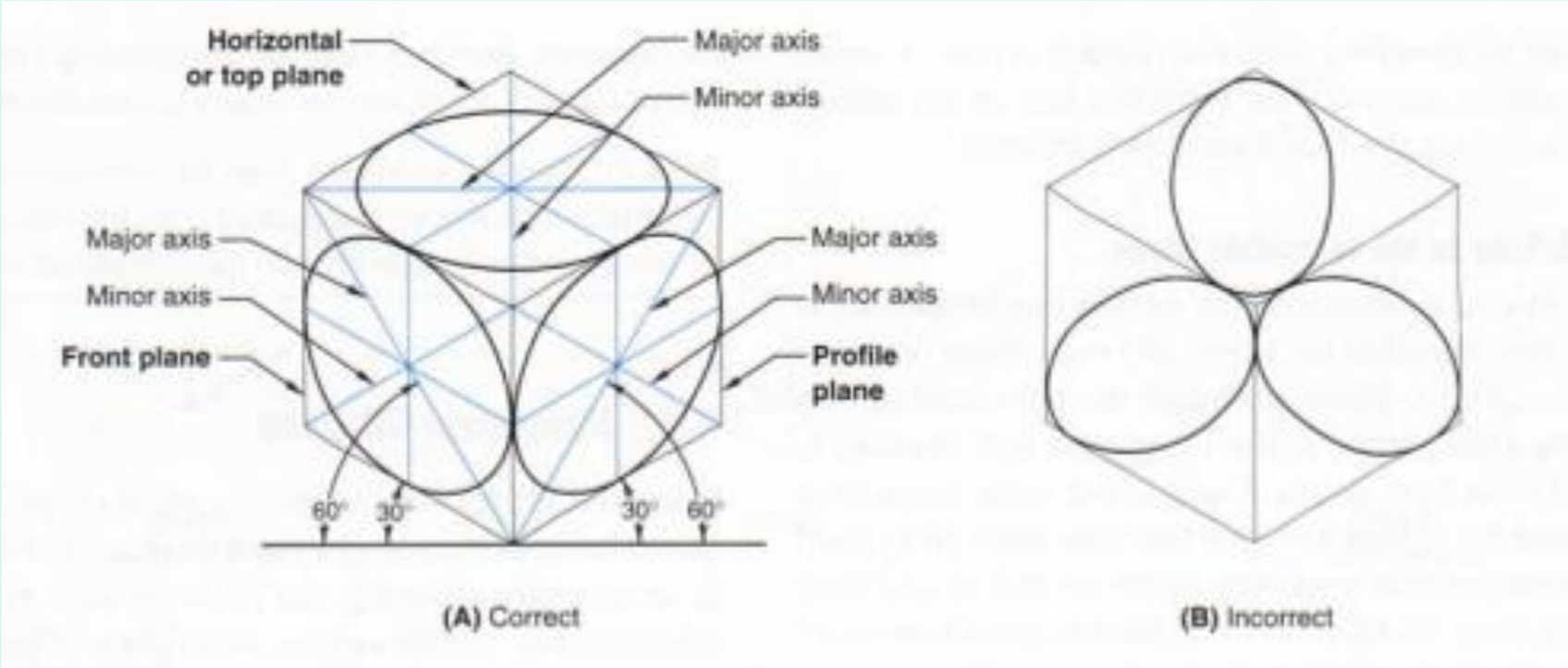
6.3 Iso-circles and arcs: sketch

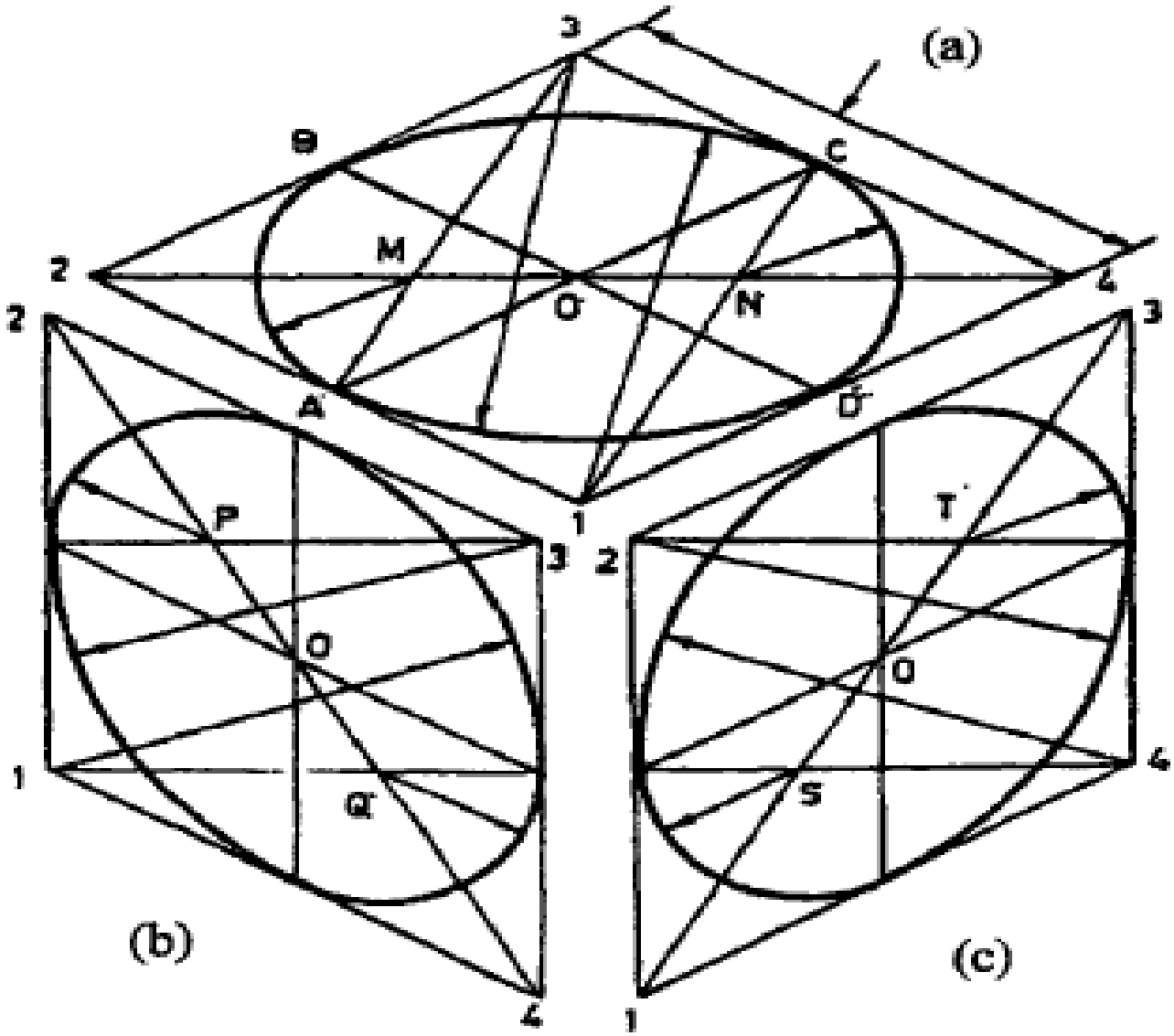
- Sketching iso-circle is simpler than drawing.
- Create isometric square, each side=diameter.
- Find the centre point and midpoints of each side.
- Use the construction lines and point to sketch each quarter of the circle.

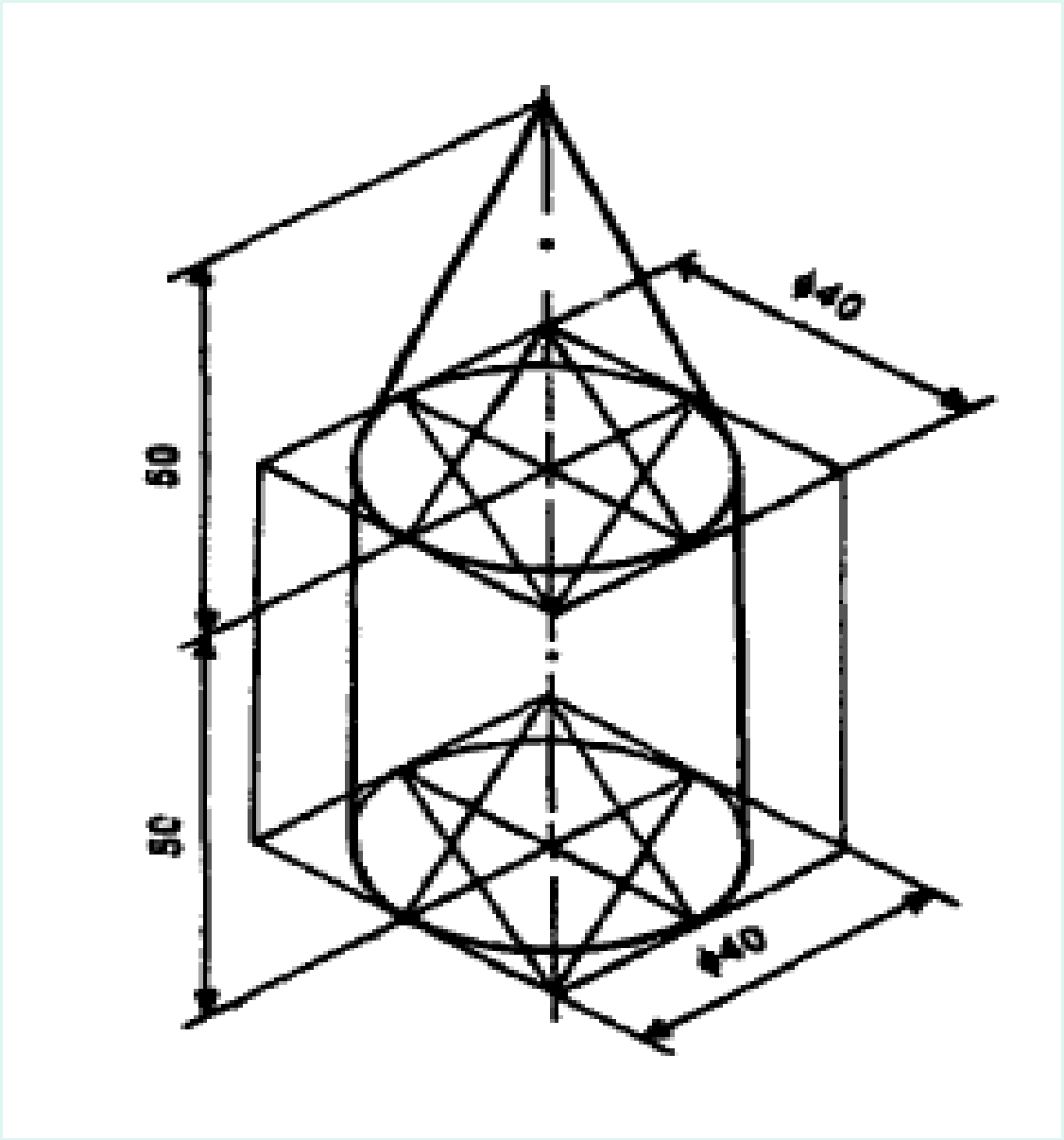


6.3 Iso-circles and arcs

- **Isometric circles or iso-circle cannot be simply drawn using compass.**
- **Any iso-circle may lie on either top plane, left (front) plane or right (profile) plane.**
- **Iso-circle looks slightly oval and skewed.**







6.3 Sketching isometric cylinder

- **Start by drawing the bounding box.**
- **The front end of the cylinder is sketched using the previous technique.**
- **The far end of the cylinder is a partial iso-circle. Sketch until meeting the tangent with the two straight lines.**