1. To represent a sectioned surface on a drawing, the surface which was cut off will be shaded by drawing thin lines inclined to the base of the drawing at 45 degrees, using the $45 \times 45$ degrees set square. Take note, if there's a hole in the sectioned part, It won't be shaded, just the surface which the sectioning line touches.
2. Principles to be followed while sectioning:
-Dimensioning lines should be thin continuous lines
-Centre lines should not be used for dimensioning
-The arrow head should approximately be a triangle and should be filled up
-The dimensioning lines should not touch the drawing; about 2 mm or 3 mm should be the distance between the drawing and dimensioning lines
-The space between two rows of dimension should be 12 mm
-Dimensions should be quoted in millimetre to the minimum number of significant figures. For example, 20 and not 20.0
-All dimension lines should maintain the same distance from the drawing
3. Half section: A half section exposes the interior of one half of an object while retaining the exterior of the other half. Half sections are used mainly for symmetric objects or assembly drawings. A half-section is a view of an object showing one-half of the view in section, as in the drawing below. The diagonal lines on the section drawing are used to indicate the area that has been theoretically cut. These lines are called section lining or cross-hatching.
Full section: In full section, the cutting plane line passes fully through the part. Normally a view is replaced with the full section view. The section lined areas are those portions that have been in actual contact with the cutting plane.
4. Leader line terminated by the use of arrow heads
5. When a scale is $5: 1$, this means that everything in reality is five times smaller than the actual scale which is 1:1.
When a scale is $1: 10$, it means that the object is 10 times smaller than in real life scale of $1: 1$. It could also be said that 1 unit in drawing is equal to 10 units in real life.
6. Shape identification symbols:

Diameter: ( $\varnothing$ )
Radius: R
Square:


Spherical Radius: SR
7. Elements to be considered when obtaining a projection:
-Plan
-Front elevation
-End elevation

Orthographic projection: This is the method of representing three-dimensional objects, usually by three two-dimensional drawings in each of which the object is viewed along parallel lines that are perpendicular to the plane of the drawing.
8. A projection of an object is known as orthographic when its drawn in 2-D format and the plan, front elevation and end view are drawn separately, with parallel lines connecting the three together.
9. First Angle projection

It is one of the angles used for orthographic projection drawings and is approved internationally except the United States. In this projection method, the object is placed in the first quadrant meaning it's placed between the plane of projection and the observer


Third Angle Projection
In the third angle projection, the 3D object is to be projected is placed in the third quadrant and is positioned behind the [vertical plane and below the horizontal plane.


## Objectives

1. A-reference
2. B-False
3. C-Directly
4. A- 60
5. A-60
6. B- Rivet
7. C-Crowning
8. B- 45
9. B-An Ellipse
10. A - An Ellipse
11. C-Cylinder
12. A - Cone
13. C- Pivot bearing
14. C-55
15. D Horizontal plane
