

1) Using section lines inclined at angle 45°

2)

- a. Dimension lines should never be crossed
- b. Extension lines should never be crossed
- c. Avoid giving dimensions to hidden lines
- d. Only needed dimensions should be usefully
- e. Dimensions should not be repeated or duplicated
- f. Dimensions should never be placed on the object in question unless it is the only option
- g. Holes should be located by their centre lines
- h. Circles are dimensioned by their diameter, and arcs by their radius
- i. Dimensions should be placed distances from the object so that intermediate dimensions can nest closer to the object to avoid crossing extension lines.
- j. Holes should be located in the view that shows the feature as a circle.

3)

- a. Half-section: This is the view of an object showing half of the view in section. They are used to show both the internal and external view of symmetrical objects. The cutting plane is off-set to include features that are not in a straight line.
- b. Full-section: If the imaginary cutting plane passes through the entire object, splitting the drawn object in two with the interior of the object revealed, it is called a 'full-section'. It is the most widely-used sectional view.

4)

A leader line also has a terminator and some text. A leader line may have a reference line under the text. An arrow terminator is used to point to an edge of an item. The dot is used to point to a face. The architectural tick can be used for referring to multiple parallel edges.

5)

- a. 5:1 scale: An enlargement scale used for enlarging the object 5 times its original size.
- b. 1:10 scale: A reducing scale used to reduce the object 10 times its original size.

6)

- a.  $\Phi$
- b. R
- c.
- d. SR

7)

- i. Front View
- ii. Side View
- iii. The Plan

Orthographic drawings are clear, detailed ways to represent the image of an object.

8)

It is called oblique projection when the principal planes or axes of an object in an orthographic projection are not parallel with the projection plane.

9)

a. 1st Angle Projection: This is a method of creating a 2D drawing of a 3D object. It is mainly used in Europe and Asia and has not been officially used in Australia for many years. In Australia, third angle projection is the preferred method of orthographic projection. Note the symbol for first angle orthographic projection.

b. 3rd Angle Projection: This is a method of orthographic projection which is a technique in portraying a 3D design using a series of 2D views. For the third angle projection, the object is placed below and behind the viewing planes meaning the plane of projection is between the observer and the object.

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#### Answers To Objectives

1. A
2. A
3. C
4. B
5. A
6. B
7. C
8. B
9. C
10. A
11. C
12. A
13. B
14. C
15. D