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**DEPARTMENT: Mechanical Engineering.**

**COURSE CODE: ENG 232**

**TITLE: Engineering Drawing**

1. A cutting plane line is used to represent a sectioned surface on a drawing. A cutting plane is represented on a drawing by a cutting plane line. This is a heavy long-short-short-long kind of line terminated with arrows. The arrows in show the direction of view.

2. I) Dimensions shouldn't be duplicated or the same information will be given in two different ways .

II) Unnecessary dimensions shouldn't be used - only the dimensions needed to create or inspect the part.

III) Make sure to avoid dimensioning to hidden lines wherever possible.

IV) Dimensions shouldn't be placed on the object unless that is the only option.

V) A circle is dimensioned by its diameter, an arc by its radius.

VI) Holes should be located by their center lines.

VII) Holes should be located in the view that shows the feature as a circle.

VIII) Dimensions should never be crossed.

IX) Never cross extension lines.

X) Overall dimensions should be placed the greatest distance away from the object so that intermediate dimension can nest closer to the object to avoid crossing extension lines.

3a) Half-section: A half-section is a view of an object showing one-half of the view in section. Symmetrical parts can be shown

in half sections. Half sections are commonly used to show both the internal and outside 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, this is called a "full section." A full section is the most widely-used sectional view.

4. A leader line also has a terminator and some text. It 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.

5a. 5:1 scale: Used for enlarging the object 5 times its original size(Enlargement Scale).

b. 1:10 scale: Used to reduce the object 10 times its original size (Reduction Scale).

6a.  $\Phi$

b. R

c.

d. SR

7a) Front View

b) Side View

c) The Plan

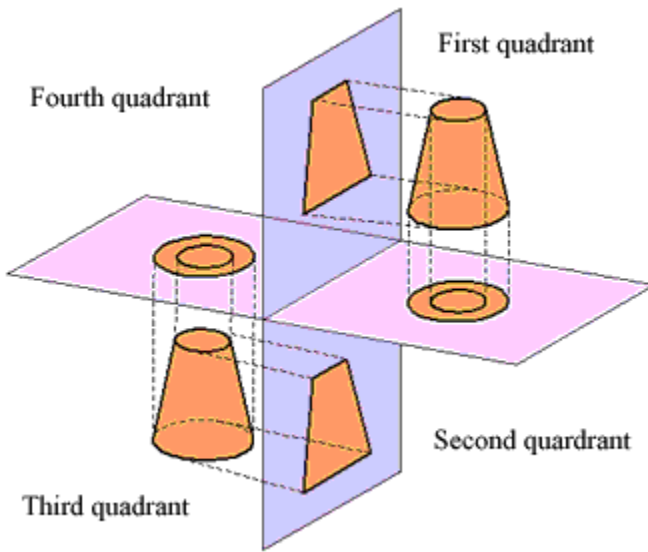
An orthographic drawing is a clear and detailed way to represent the image of an object.

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

9. FIRST ANGLE PROJECTION: To get the first angle projection, the object is placed in the first quadrant meaning it's placed between the plane of projection and the observer.

THIRD ANGLE PROJECTION: 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.



## Objective Answers

1. A
2. A
3. C
4. B
5. A
6. B
7. C

8. B

9. A

10. A

11. C

12. A

13. C

14. C

15. D