Rajiv Gandhi Institute of Petroleum Technology
Jais, Amethi

An Institution of National Importance, Government of India

Engineering Graphics (ME121)

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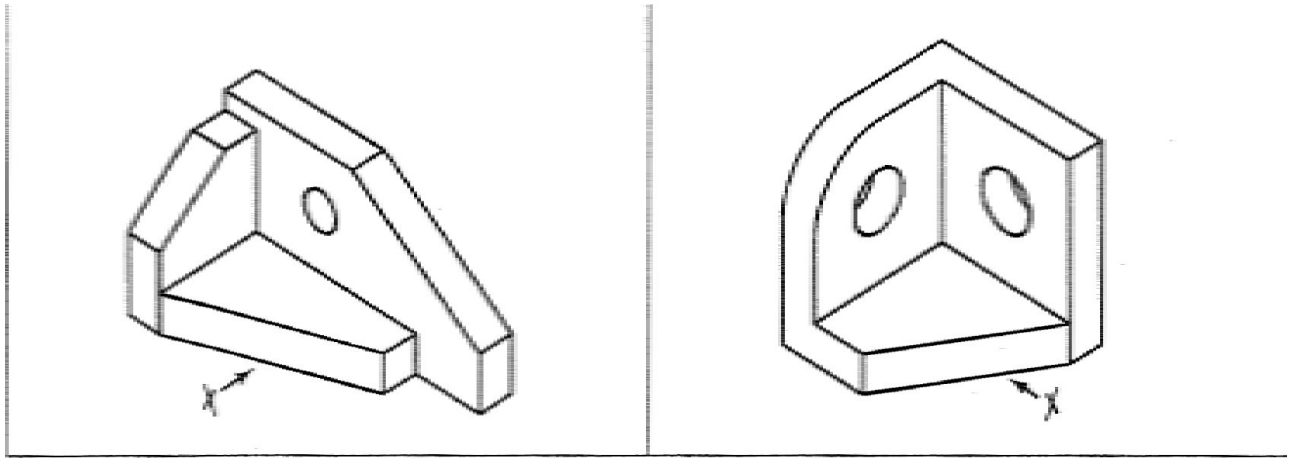
Course Content

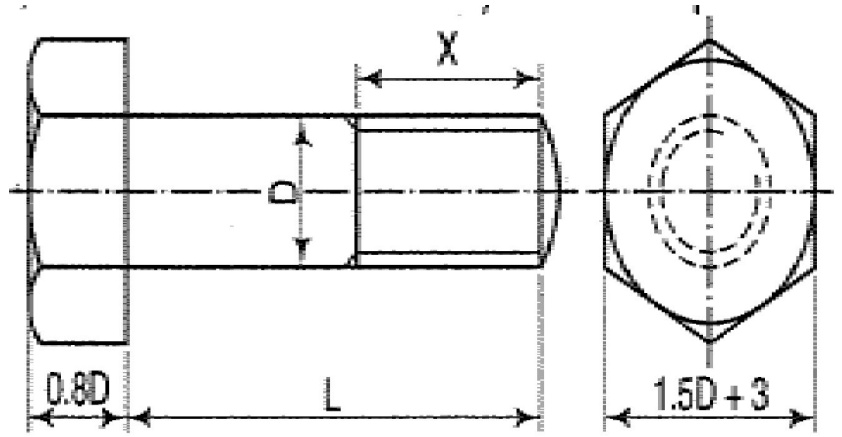
Corse Credit-03

1. Introduction to Engineering Graphics
2. Geometric Construction
3. Projection of Points and Lines
4. First Angle and Third Angle Projection
5. Orthographic and Isometric Projections
6. Oblique and Perspective Projections
7. Machine Drawing and CAD Modelling

What is Engineering Graphics??

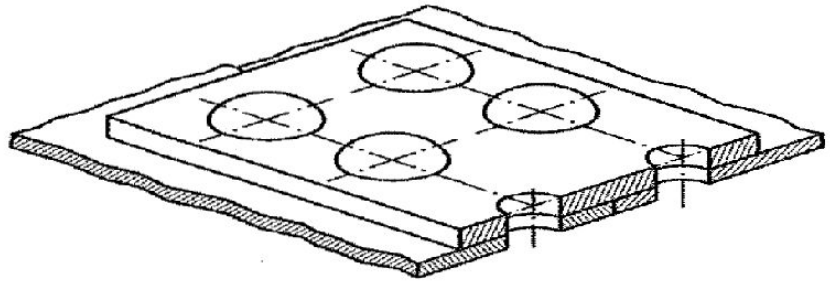
- This is language of engineers and creating pictorial view of engineering structure.

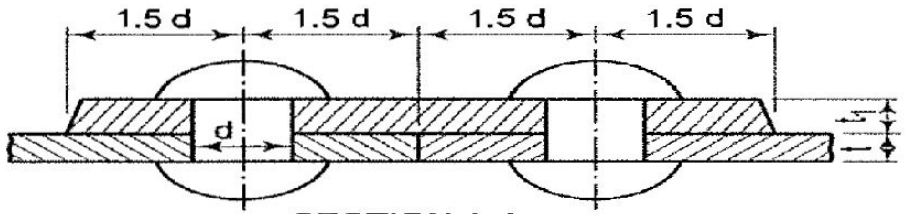




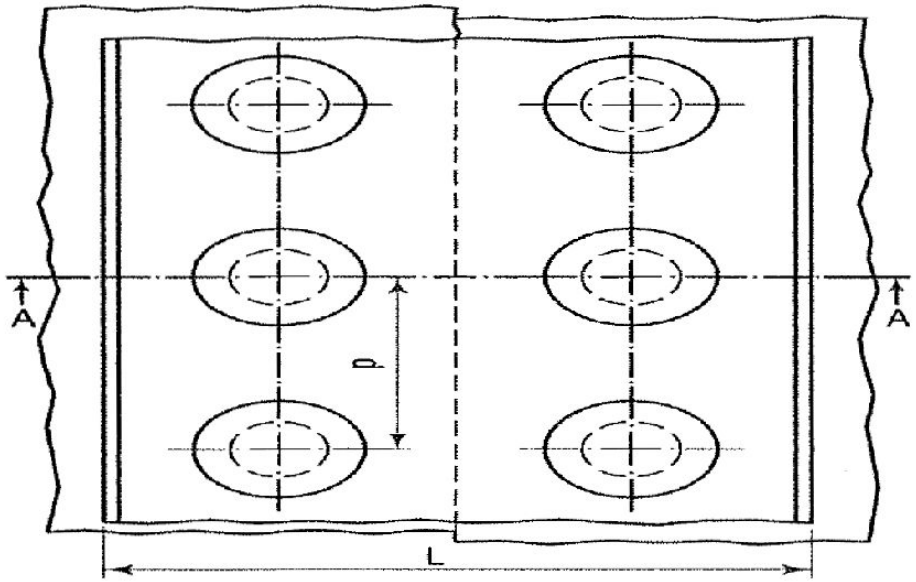
Its Importance.....

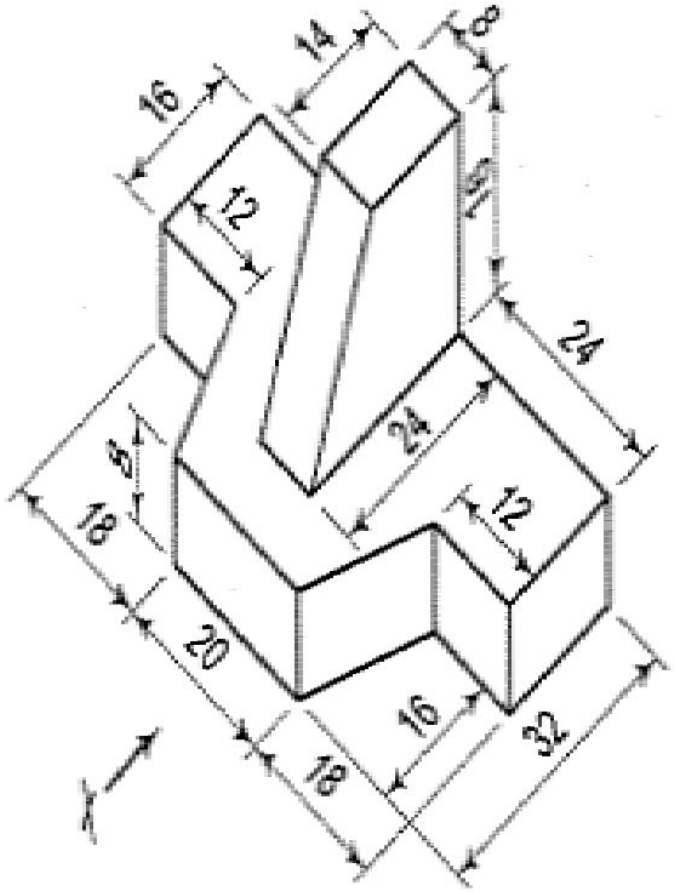
- Engineering drawings are essential for providing other engineers and machinists with relevant information.
- Permit the readers to imagine the suggested product in their minds.
- Give details on the product's measurements and the materials that went into making it.
- Provide views from the top, the side, and the front





SECTION A-A

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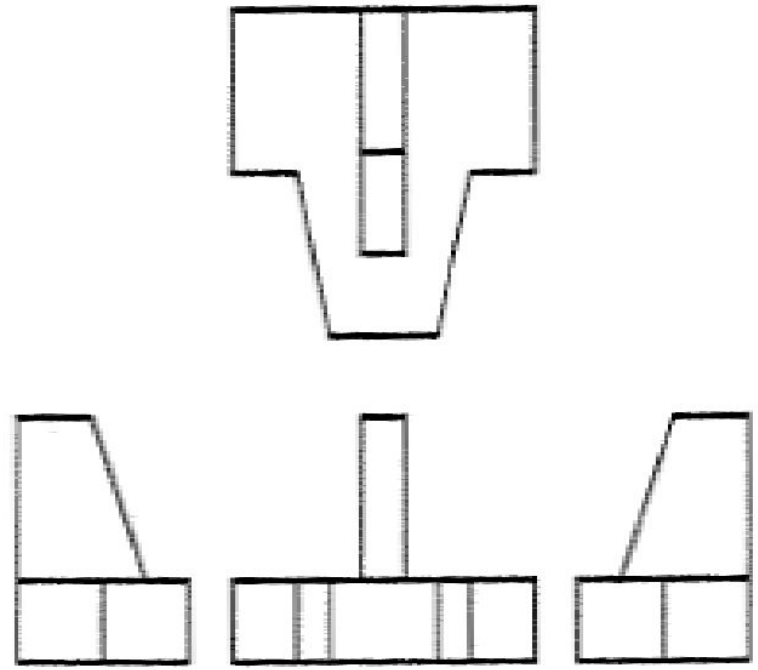

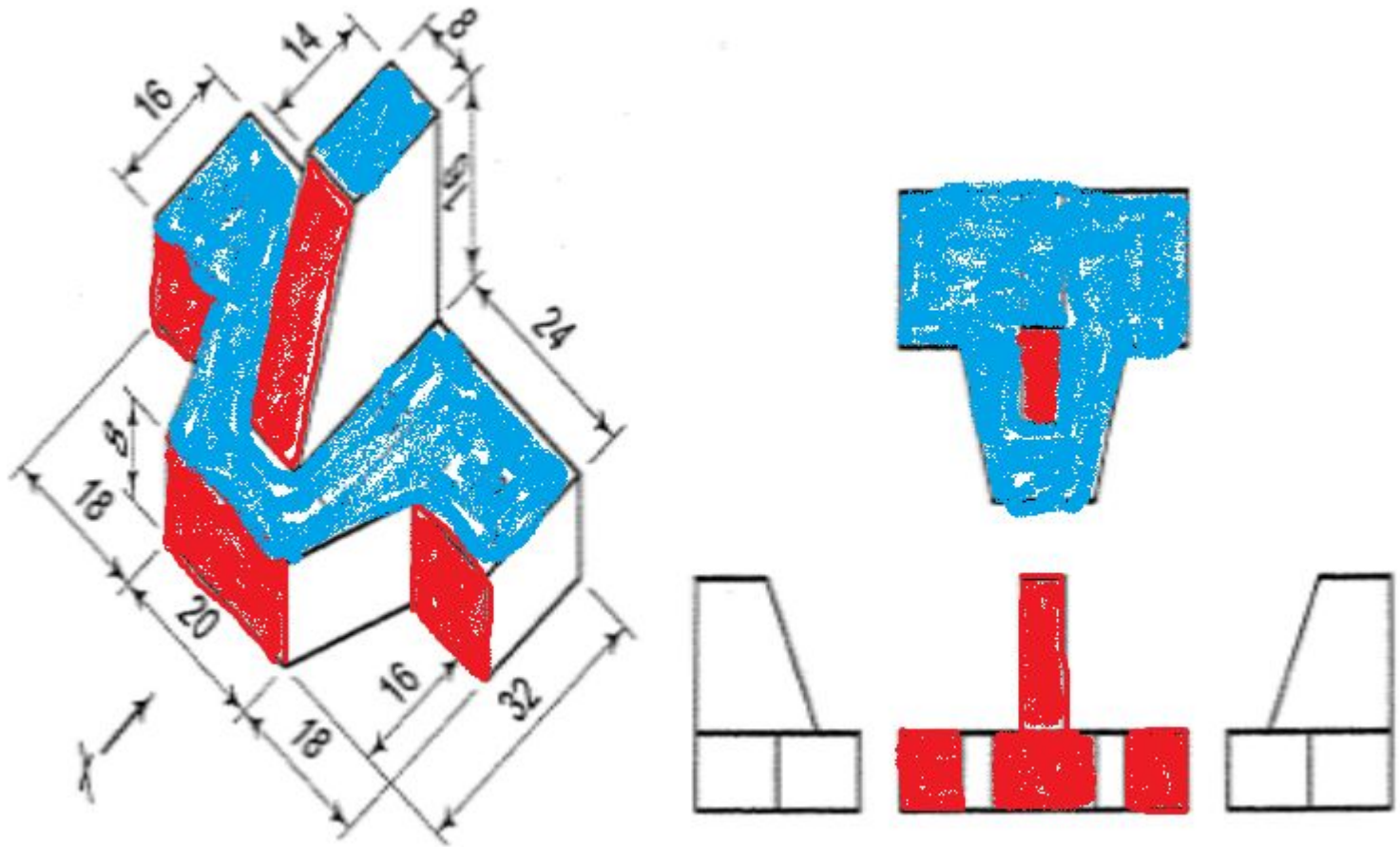
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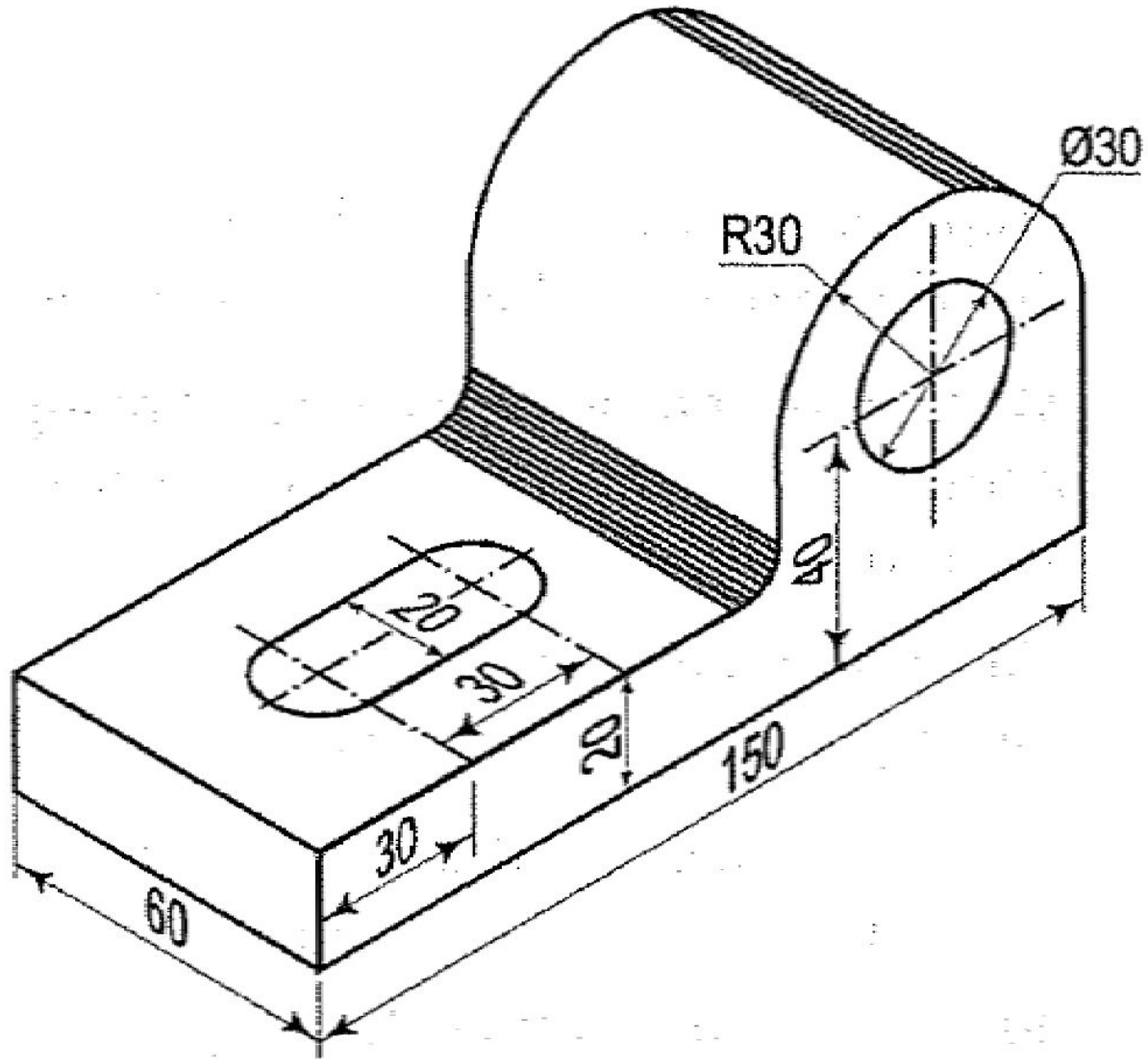
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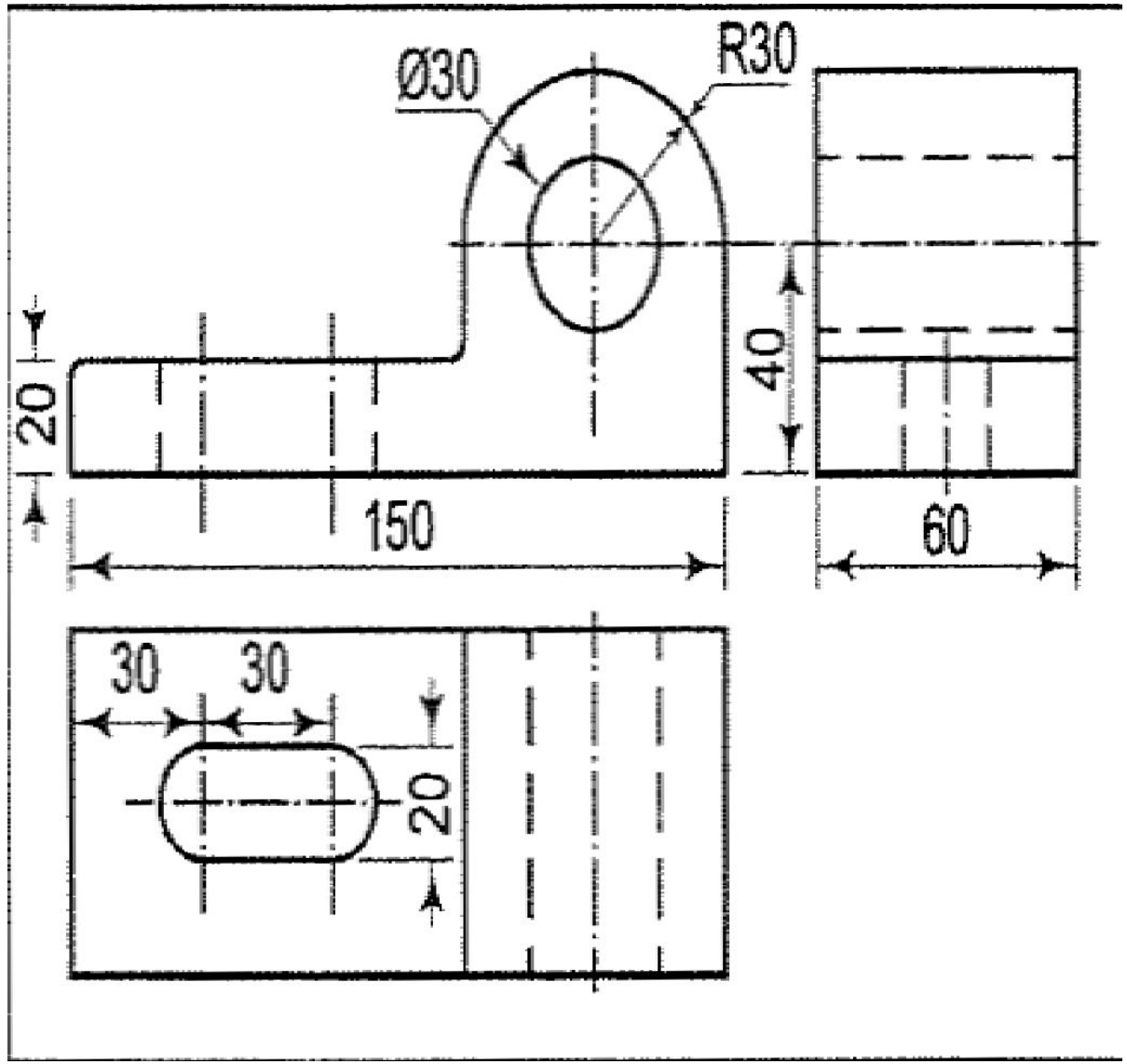
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Types of Drawings and standards

- **Engineering drawing (a) part (b) assembly**
- **Civil drawing**
- **Electrical drawing**

- American Society of Mechanical Engineers (ASME)(3rd angle projection)
- International standard (ISO)(1st angle projection)
- Bureau of Indian Standards (BIS)

Scale

- It is defined as ratio of liner dimension of element of object as represented in drawing to the actual dimension of object it is also known as representative fraction (RF)
- $RF = \frac{Length\ of\ Drawing}{Actual\ length\ of\ object}$
- Three type of scale are used in drawing

(a) Reducing Scale 1:2, 1:50

(b) Enlarging Scale 2:1, 50:1

(c) Full Scale 1:1

Type of Scale

- Plain Scale
- Diagonal Scale
- Comparative Scale
- Vernier Scale

$$Length\ of\ scale = RF \times maximum\ length$$

Exercise

1. Construct a scale of 1:4 to show centimetres and long enough to measure up to 5 decimetres and mark 3.8 dm. (Plain Scale)
2. Construct a scale of 1:60 to show meters and decimetres and long enough to measure up to 6 meters.(plain Scale)
3. Construct diagonal scale of 3:200 showing meters, decimetres and centimetres and measure up to 6 meter and mark 4.56 m

Instruments