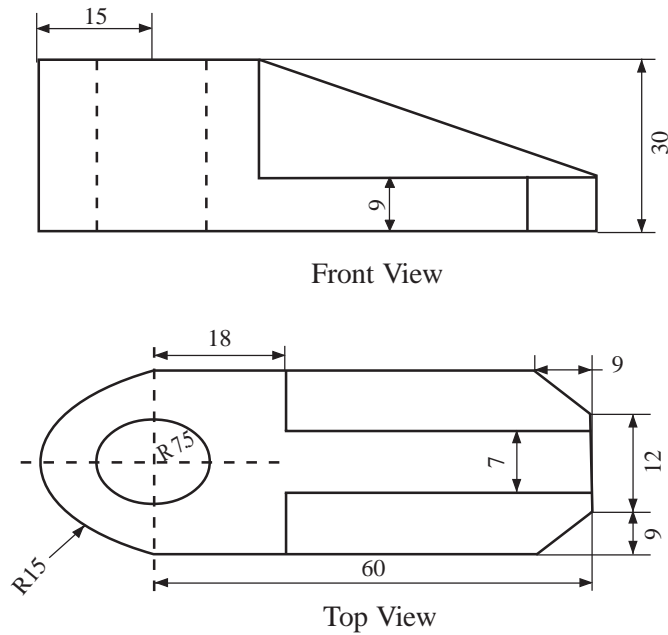


d) Figure shows Orthographic views of an object. Draw its Isometric view.

5



e) To describe a circle touching each other, their radius being given as follows;
 $R_1 = 20 \text{ mm}$, $R_2 = 30 \text{ mm}$, $R_3 = 50 \text{ mm}$.

5

2. Solve any **four** sub-questions.

a) Write a note on sizes of scale.

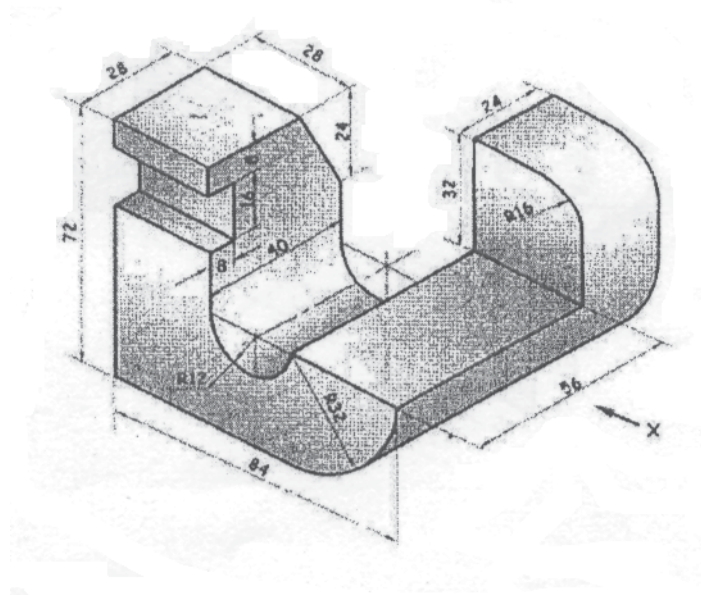
5

b) Draw the parabola by rectangle method. A ball thrown in air attains 100 m height and covers horizontal distance 150 m on ground. Draw the path of the ball (projectile).

5

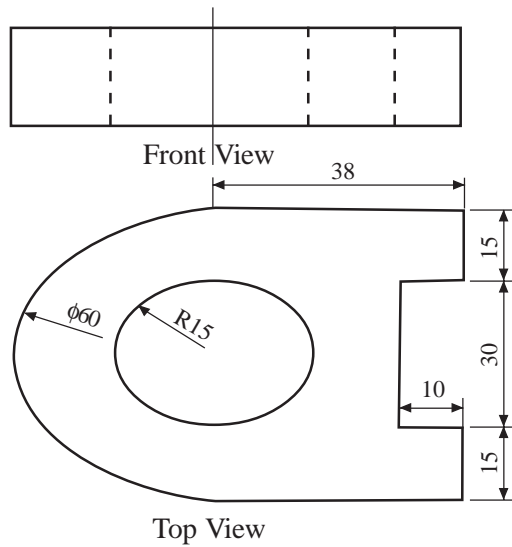
c) Looking at the direction of arrow, draw the front view of the given object. [Using 1st angle method].

5



d) Figure shows Orthographic views of an object. Draw its Isometric view.

5

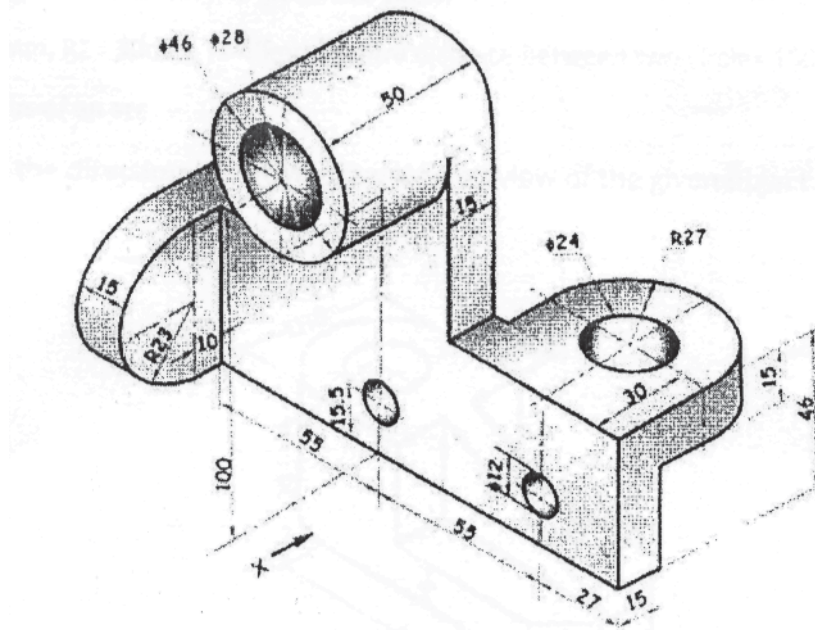


e) Two circles of radius $R1 = 50 \text{ mm}$ & $R2 = 30 \text{ mm}$ are given, the center of which are $L = 100 \text{ mm}$ apart. We will have to draw third circle with radius $R3 = 40 \text{ mm}$ touching the other two circles.

5

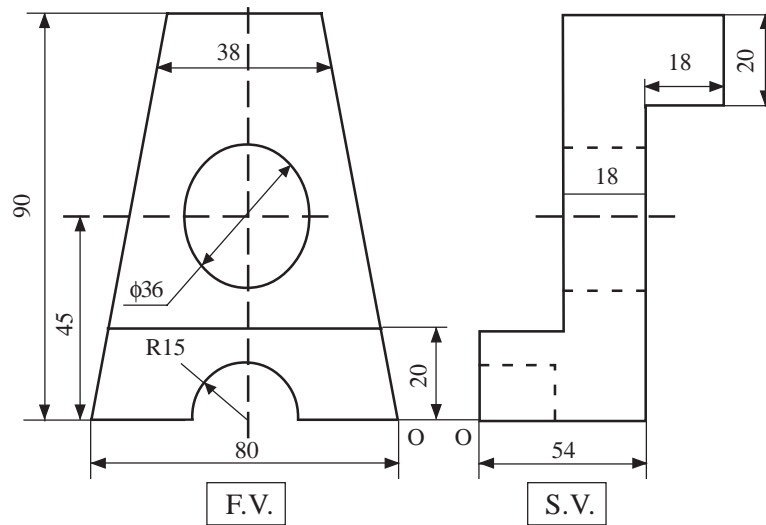
3. Solve any **four** sub-questions.

- Draw rhombus of 100 mm and 70 mm long diagonals and inscribe an ellipse in it. 5
- Point P is 40 mm and 30 mm from horizontal and vertical axes respectively. Draw Hyperbola through it. 5
- Looking at the direction of arrow, draw the F.V. of the given object. [Using 1st angle method]. 5



d) Figure shows Orthographic views of an object. Draw its Isometric view.

5



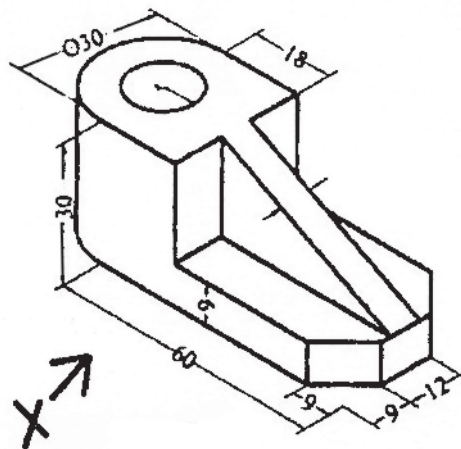
e) To draw tangential internally to given two circle;
 Given, $R_1 = 20$ mm, $R_2 = 30$ mm, $r = 40$ mm, centre distance between two circle = 80 mm. Where, r = radius of an arc. 5

4. Solve any **four** sub-questions.

a) Draw the involute of an equilateral triangle of 15 mm sides. 5

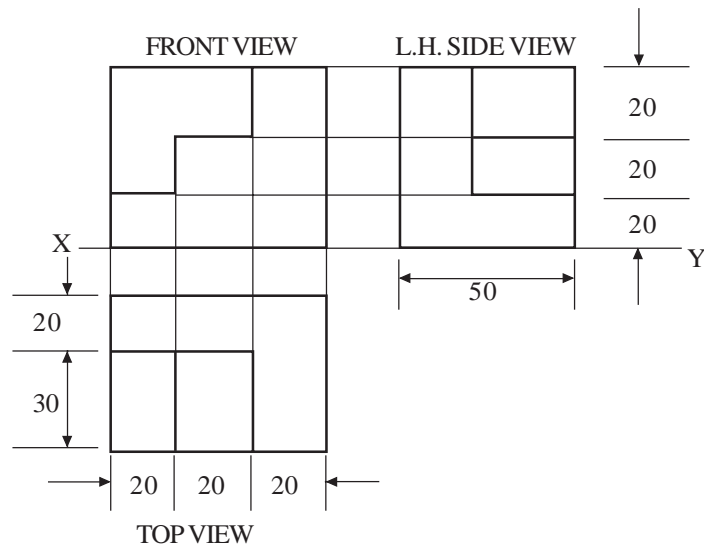
b) To draw tangential externally to given two circle;
 Given, $R_1 = 30$ mm, $R_2 = 30$ mm, $r = 40$ mm, centre distance between two circle = 100 mm Where, r = radius of an arc. 5

c) Looking at the direction of arrow, draw the top view of the given object. [Using 1st angle method]. 5



d) Figure shows Orthographic views of an object. Draw its Isometric view.

5



e) Draw the free hand sketch for following objects;

i) Cap Screw

ii) Pan Head rivet

5

