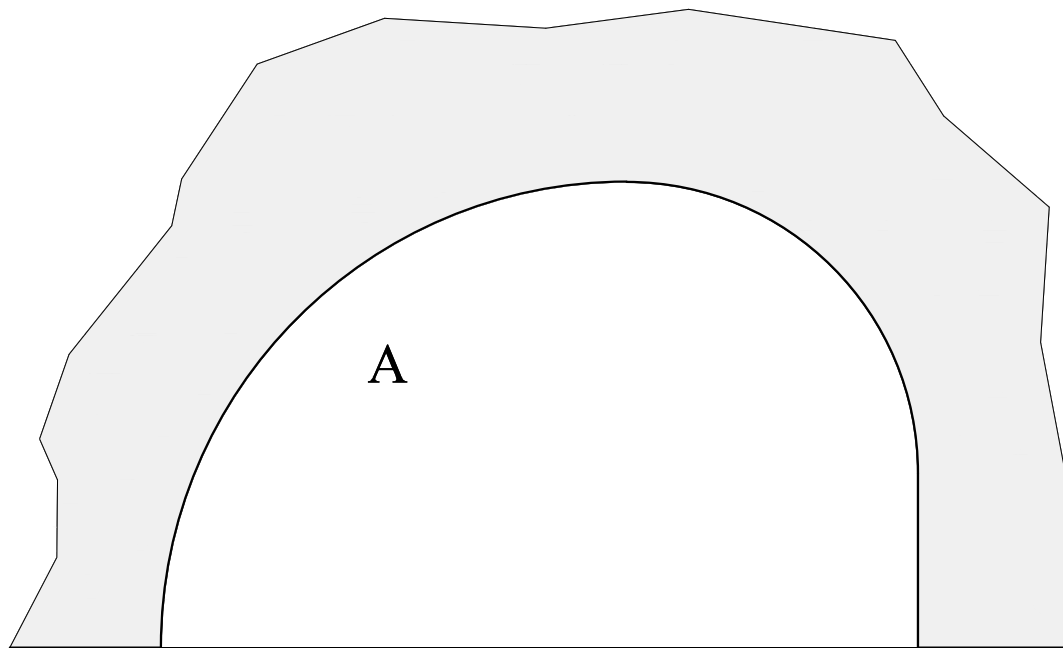
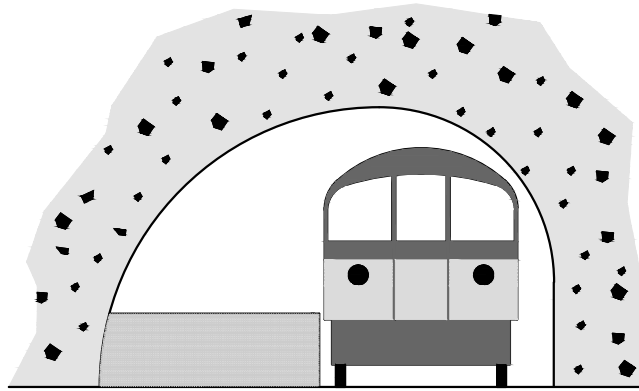


Question 1. The drawing at the side shows an underground train station. Determine graphically the area enclosed by the tunnel (marked A below) using the Mid-ordinate Method. Write down your answer in the space provided.
Note: Show all construction and any calculation employed.

12 marks



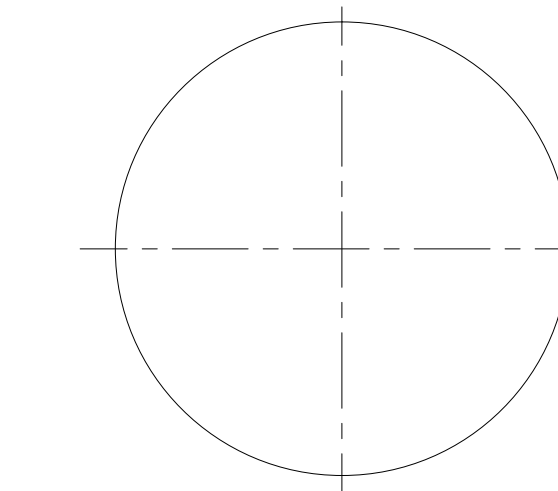
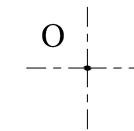
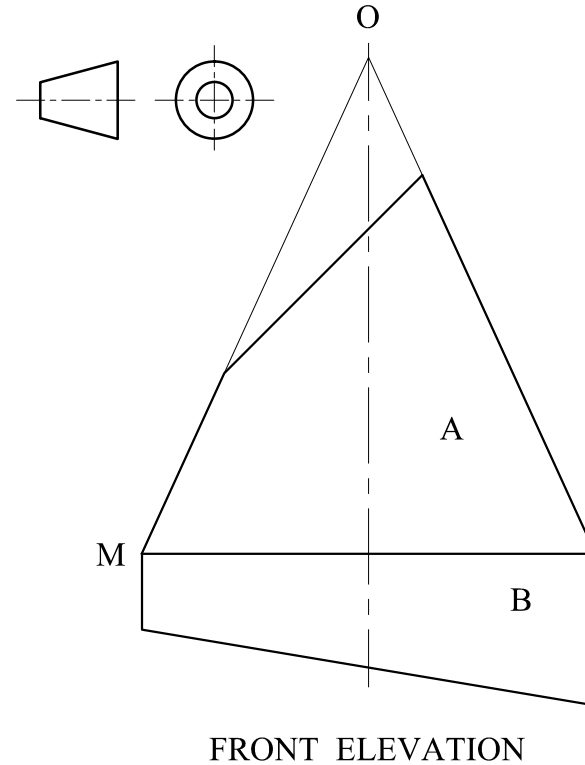
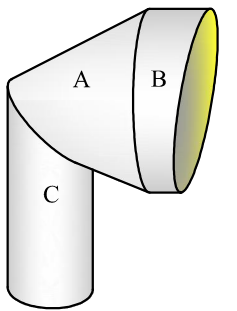
AREA OF TUNNEL: _____ MM

Question 2. A pictorial drawing of an air intake funnel made of thin sheet metal is shown on the right. It consists of a truncated cone A, a truncated cylinder B and a truncated tube C. The front elevation of the truncated cone and cylinder (which are turned upright for drawing purposes) is given below.

- On the start lines given at the bottom, draw the development of the truncated cylinder.
- Starting from the given point O, draw the development of the truncated cone.

Note: Leave all faint construction work.

16 marks



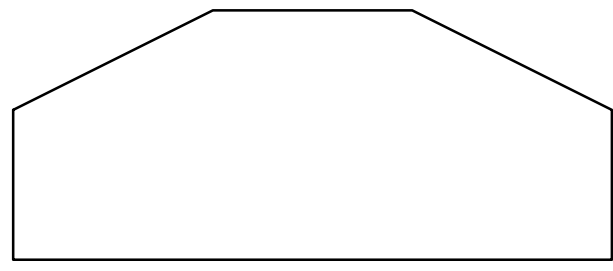
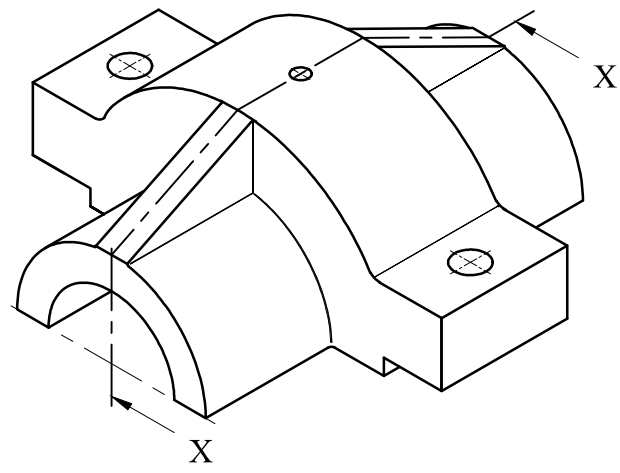
DEVELOPMENT OF TRUNCATED CONE

DEVELOPMENT OF TRUNCATED CYLINDER

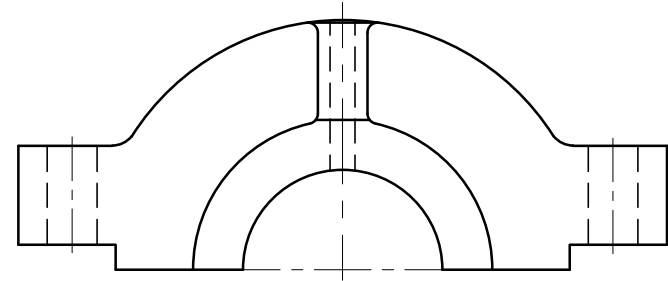
Sheet 1 of 4

Question 3. A pictorial view, an end view, a plan and an incomplete front view of a BEARING HOUSING are given.

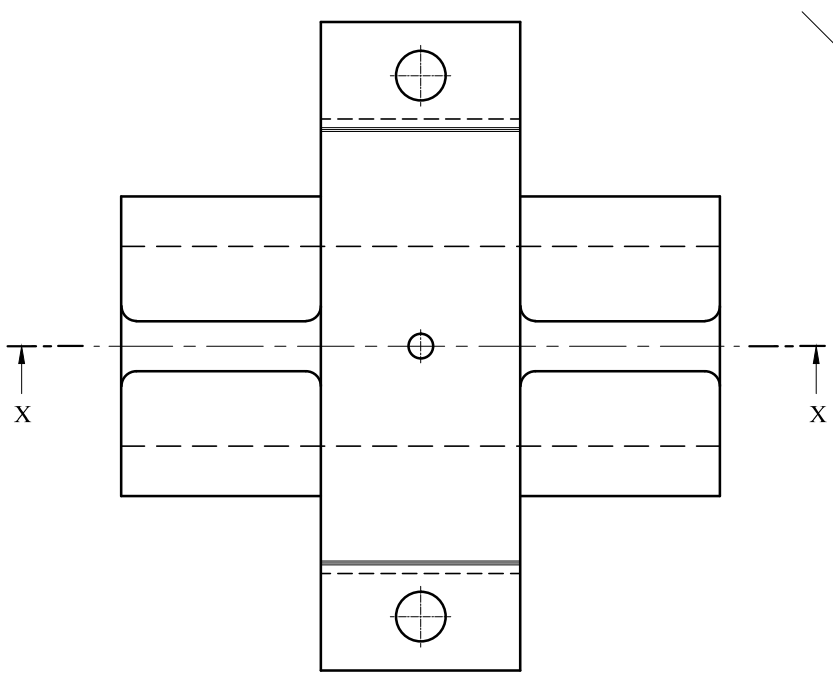
- a) Complete the sectional front view X-X.
 - b) Draw and print the angle of projection used.
- 12 marks



X - X



END VIEW



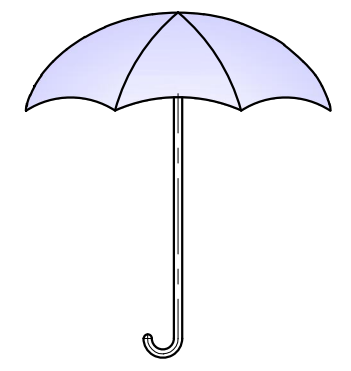
PLAN

----- SYMBOL
 ----- ANGLE PROJECTION

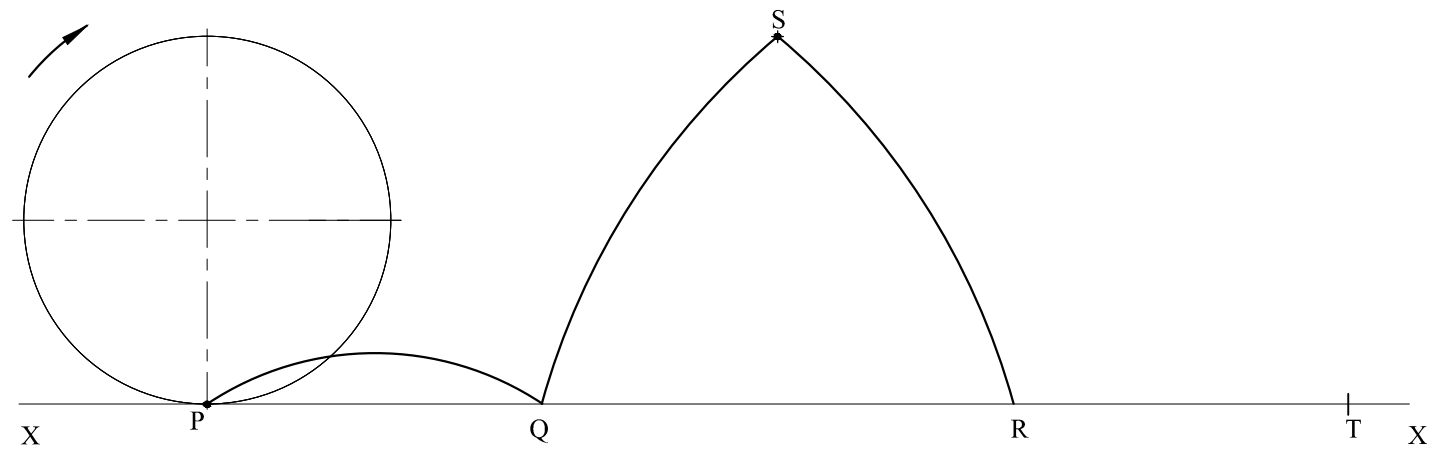
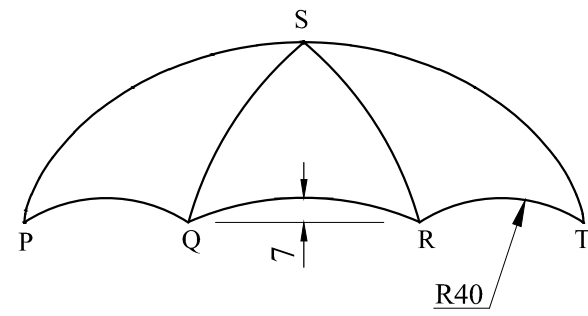
SYMBOL

Question 4. The curved top of the umbrella shown consists of a cycloid. On the given start lines, draw the umbrella without the handle as follows:

- a) Draw a cycloid formed by point P on the circumference of a circular disc which rolls without slip for one revolution on line XX in the direction of the arrow.
 - b) Locate the centre and draw arc RT.
 - c) Locate the centre and draw arc QR using the *three-point circle* method.
- Note: Point S is the mid-point of the umbrella.



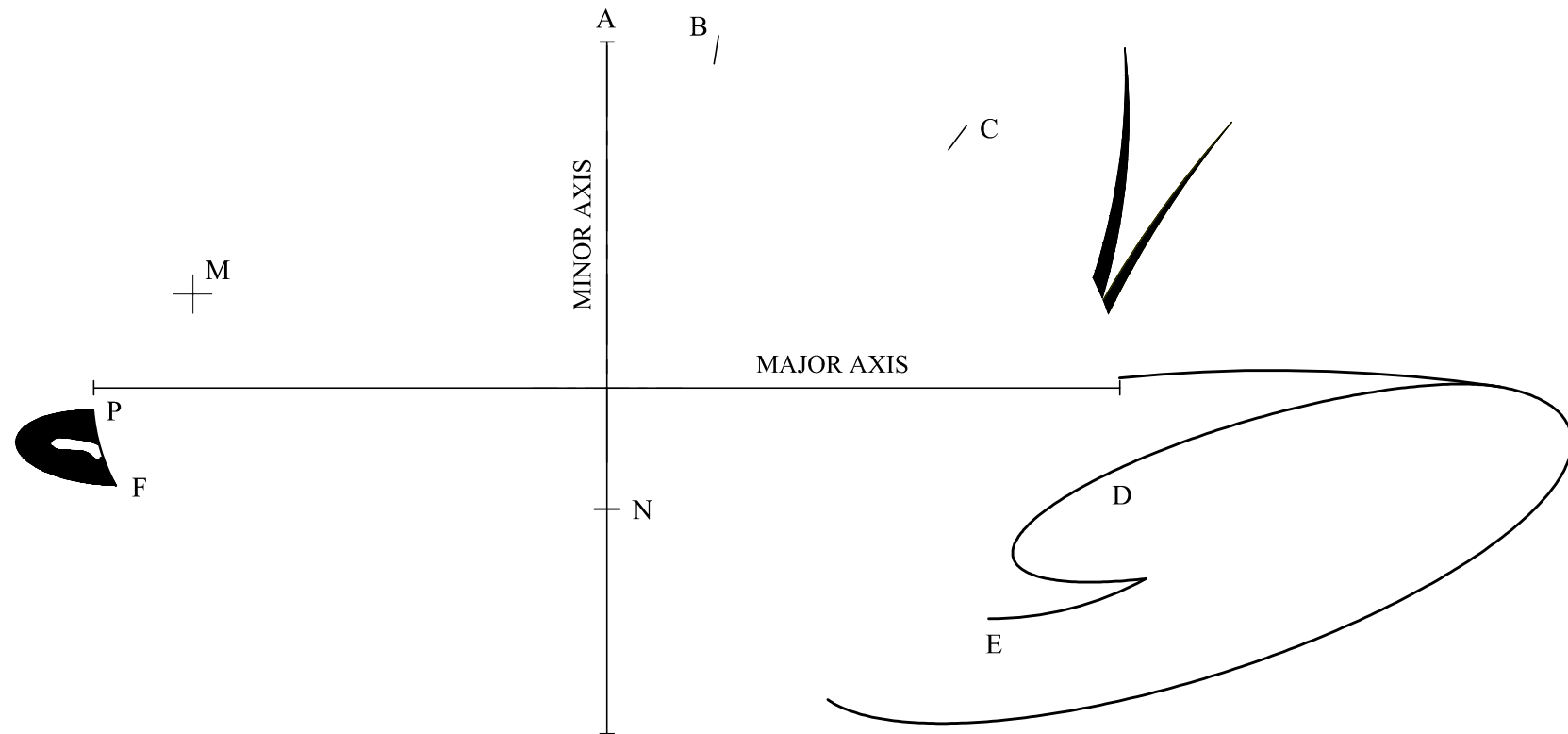
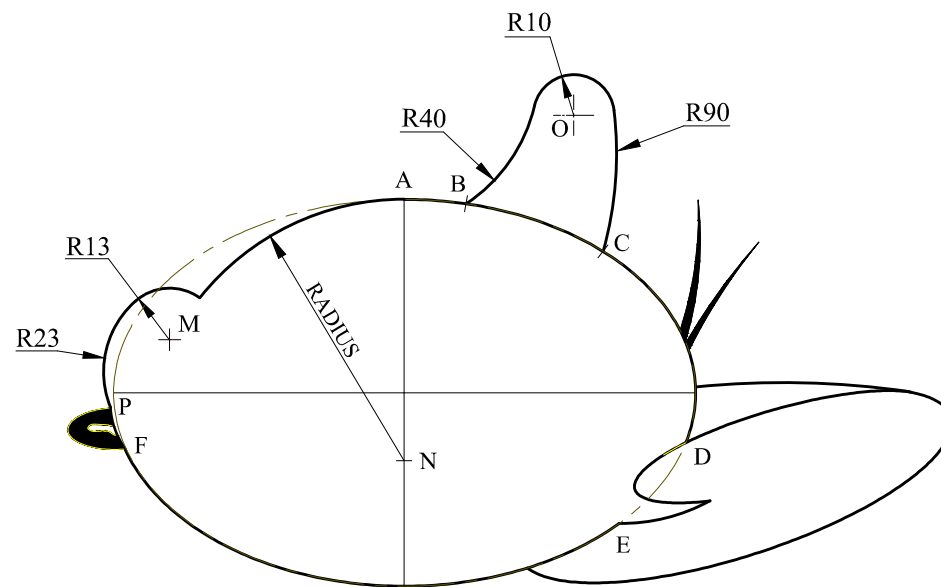
14 marks



Question 5. The cartoon figure of Jerry the mouse is given below. Also shown at the side is an enlarged, partly dimensioned drawing of the head. The outline of the head is based on the shape of an ellipse.

- Complete the drawing started at the bottom by first constructing the part ellipse ABCDEF to the given major and minor axes.
- Draw the arc with centre at N.
- Draw the ear and the nose showing the construction to obtain the centres of arcs R40, R90 and R23.

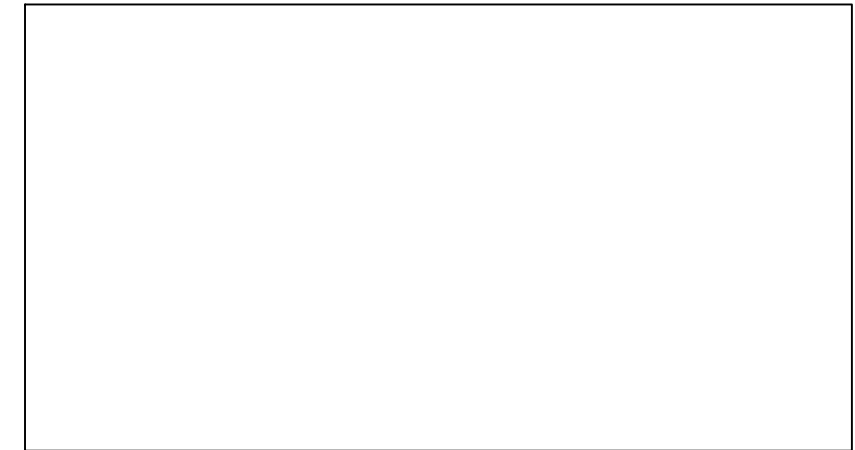
18 marks



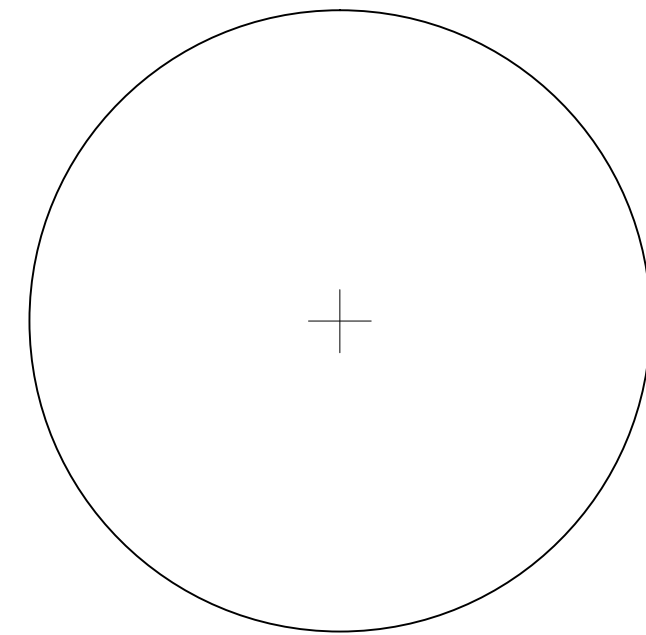
Question 6. A prohibition sign is required at the arrivals hall of an airport to indicate that passengers cannot go down the stairs with the luggage trolley.

- Draw two preliminary freehand sketches in the given rectangle to indicate the above message.
- Use your freehand sketches to make a final drawing of the prohibition sign in the circle provided, using drawing instruments where required.
- Colour your final drawing, using the appropriate colours for a prohibition sign.

12 marks



FREEHAND SKETCHES



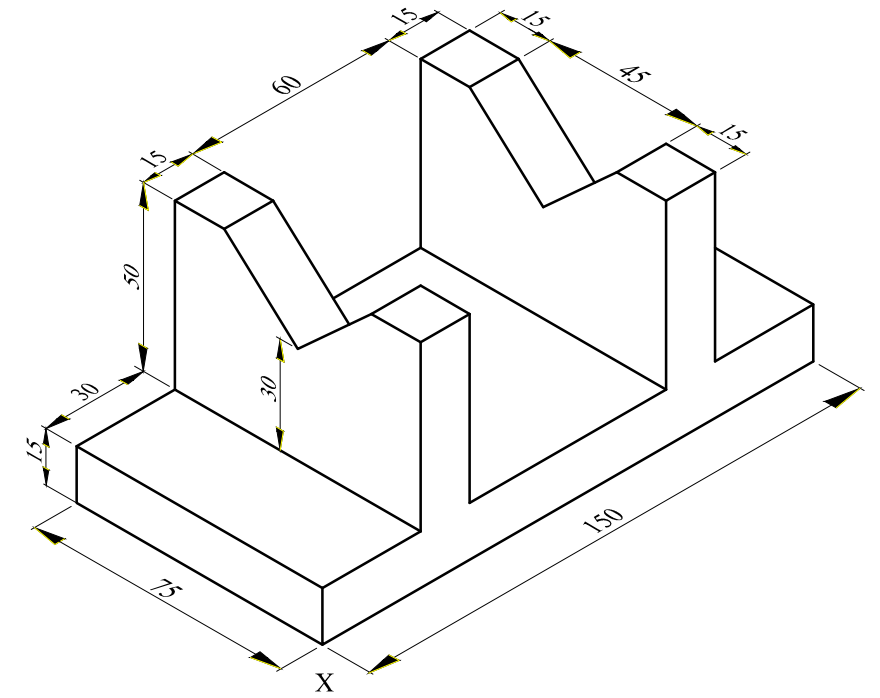
PROHIBITION SIGN

Sheet 3 of 4

Question 7. A dimensioned pictorial view of a Vee Block is shown on the right.
 On the start lines given below, draw an **estimated two-point perspective drawing**
 of the Vee Block.

Note: Leave all faint construction lines visible.

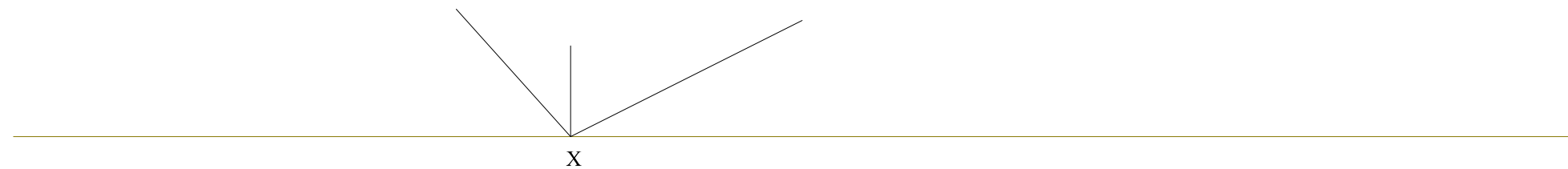
16 marks



VP 1



VP 2



Sheet 4 of 4