

Question 1.

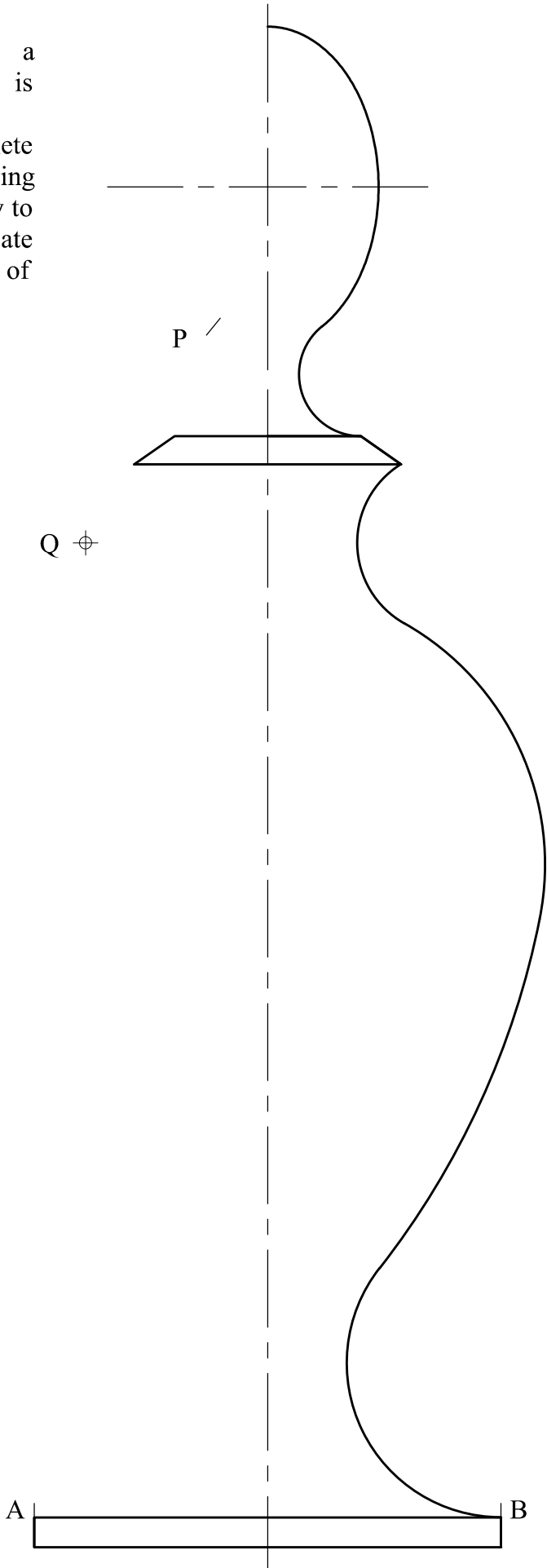
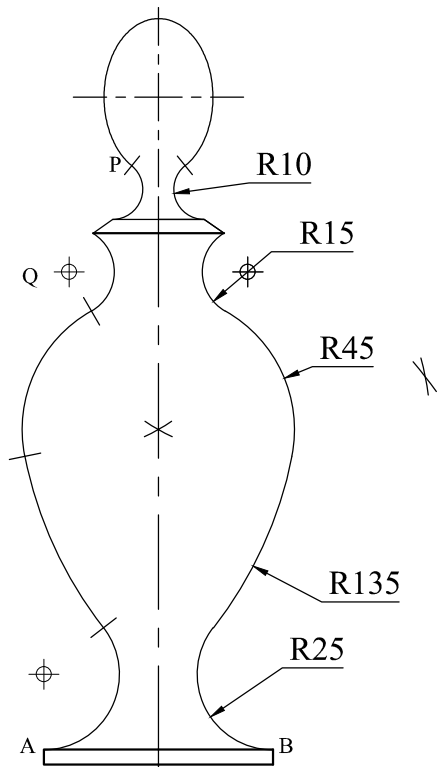
A dimensioned profile of a symmetrical Perfume Bottle is shown below.

Using the given start lines, complete the outline of the bottle showing clearly all constructions necessary to draw the part ellipse and to locate the centres and the points of tangencies.

Notes:

- The elliptical bottle top has a major axis of 52mm and a minor axis of 36mm.
- Locate the focal points and construct a normal at point P.
- The centre of the R10 arcs lies on this normal.
- The centre Q of the R15 arc is given.
- The R25 arc is tangential to line AB at the extreme end.
- The centre of the R45 arc lies on the given vertical centre line.

(14 marks)



Question 2.

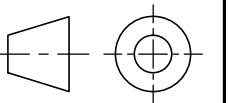
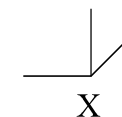
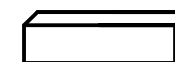
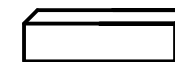
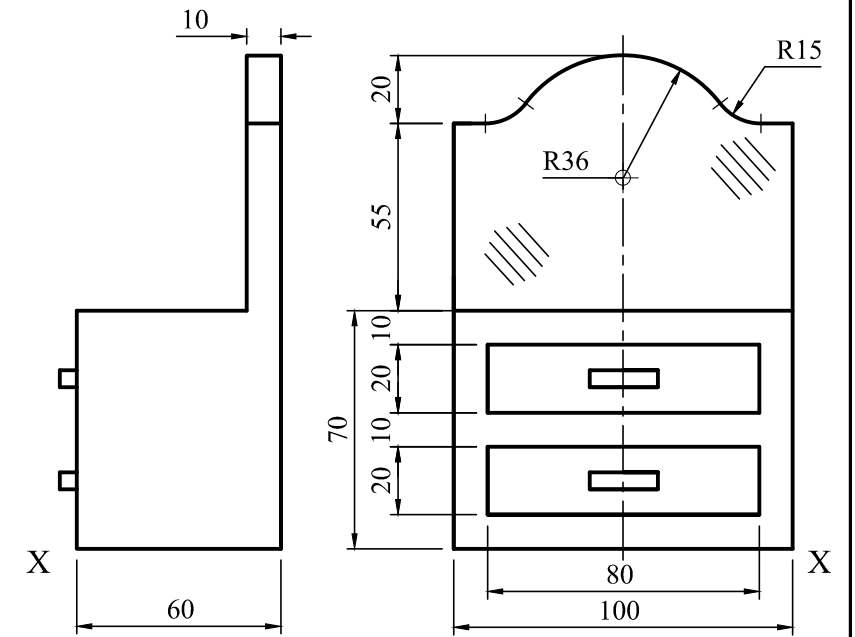
Two orthographic views of a vanity chest are given on the right.

Using the given dimensions and on the given start lines, draw a **cabinet oblique view** of the furniture placing corner X in the front right hand corner.

Note:

- The drawer knobs are given.

(10 marks)

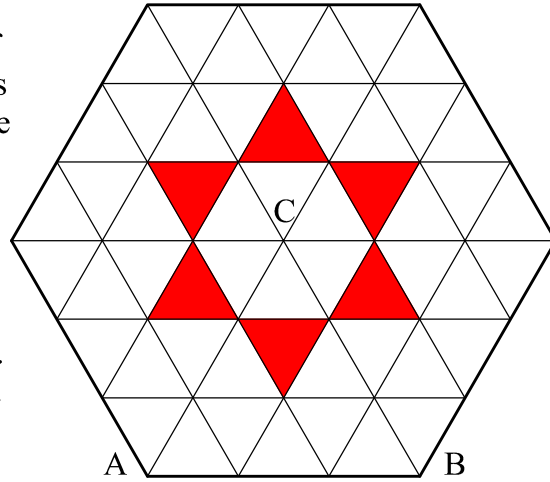


Question 3.

The figure on the right shows a tessellation made up of equilateral triangles. The boundary of the tessellated area consists of a regular hexagon. Six of the triangles are coloured to create the final pattern.

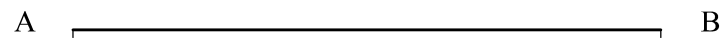
On the given base line AB below:

- Construct an equilateral triangle ABC.
- Use centre C to draw a circle touching corners A and B.
- Inside the circle, construct a regular hexagon.
- Divide the base line AB geometrically into three equal parts.
- Use the appropriate set square to complete the given pattern.
- Colour the triangles shown shaded.



Note:

- Leave all construction lines visible.
 - Marks will be awarded for accuracy.
- (12 marks)**



Question 4.

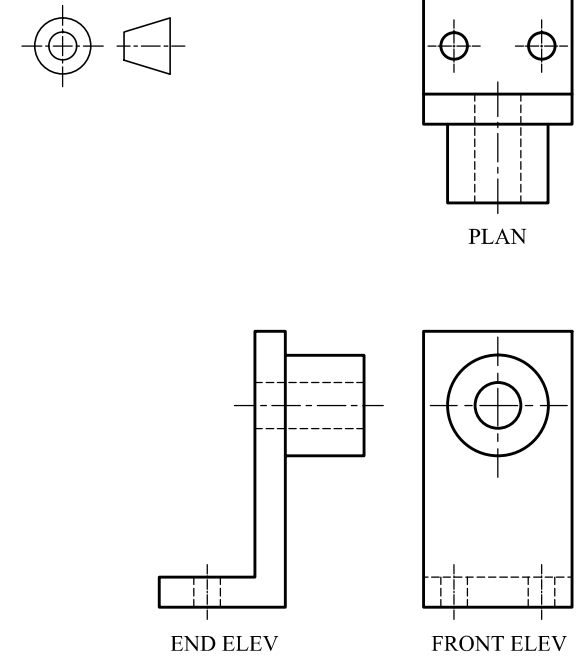
Three orthographic views of a mild steel component are given on the right.

In the space provided below:

- Draw **two** freehand, well proportioned, pictorial sketches of the component: one sketch as seen from the front and the other as seen from the back.
- Shade **one** of the drawings and give it a shiny mild steel texture.

Note: The scale of the sketches is to be approximately 2 : 1.

(12 marks)

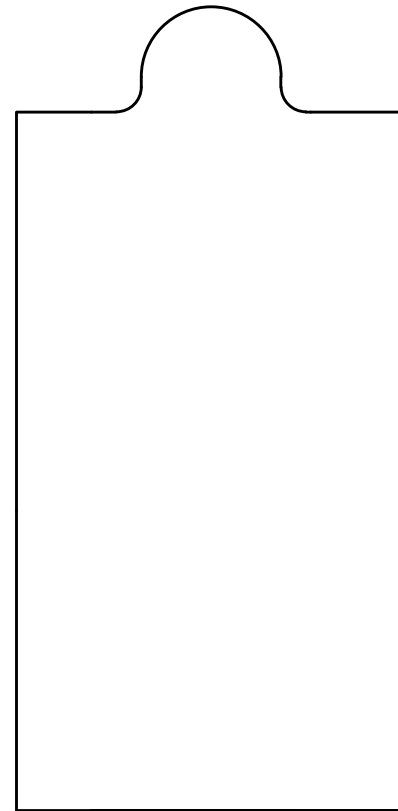
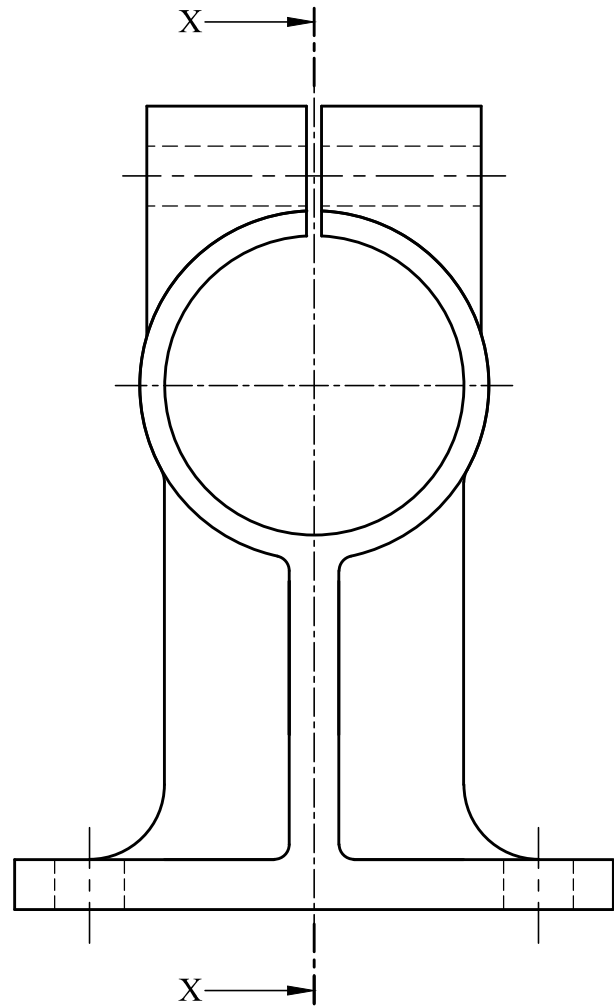
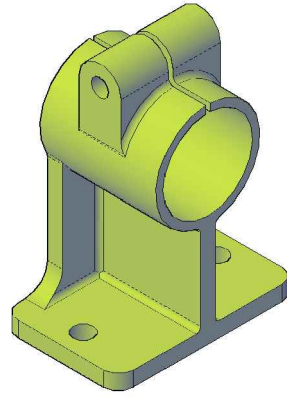


Question 5.

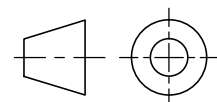
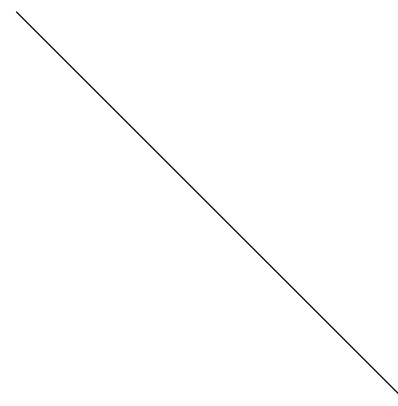
A pictorial illustration, a Front Elevation, a Plan and an incomplete End Elevation of a Cast Iron Bracket are given.

In the space provided complete the Sectional End Elevation X-X.

(12 marks)



X-X



Question 6.

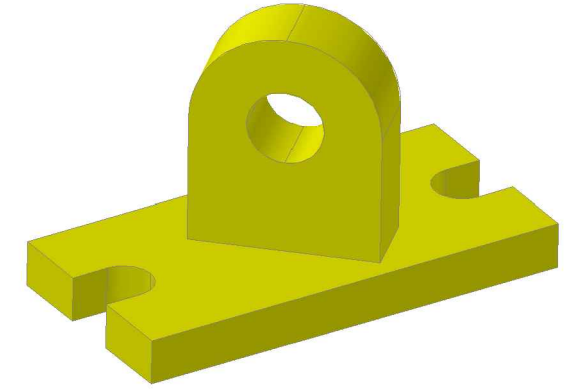
A pictorial illustration, a plan view and an auxiliary view of a lifting eye bracket are given.

In the space provided, project a Front Elevation of the bracket.

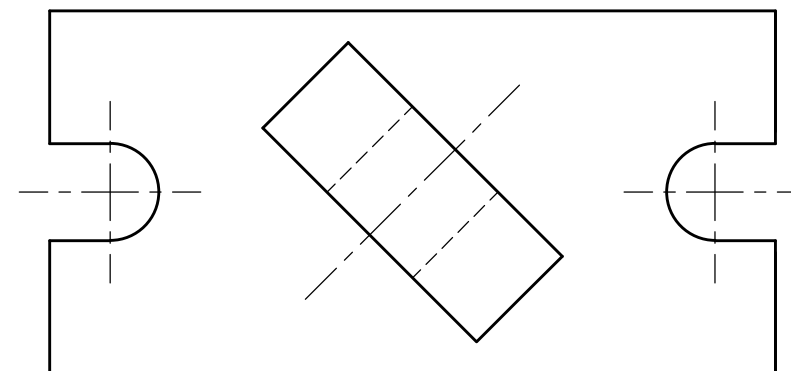
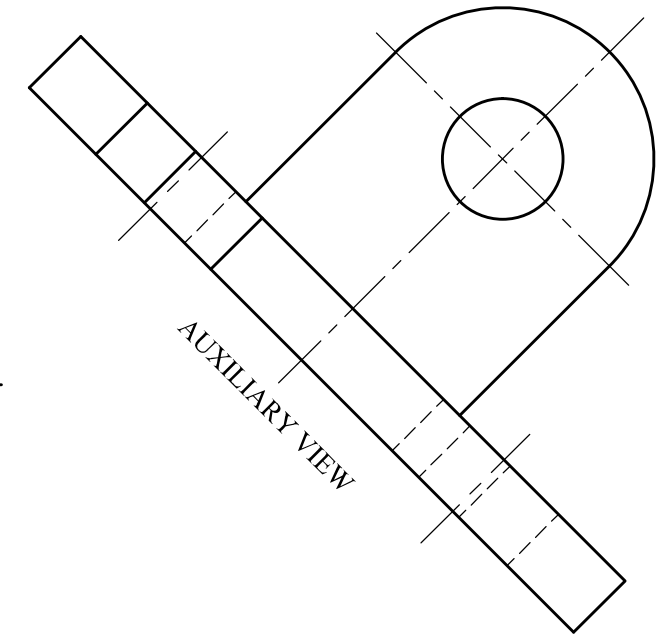
Notes:

- Leave all construction lines visible.
- The base line of the Front Elevation is given.
- Include hidden detail.

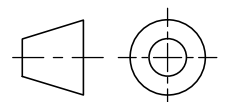
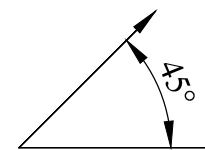
(15 marks)



FRONT ELEVATION



PLAN



Question 7.

A 3-D view and two orthographic views of a Toy Tractor are given.

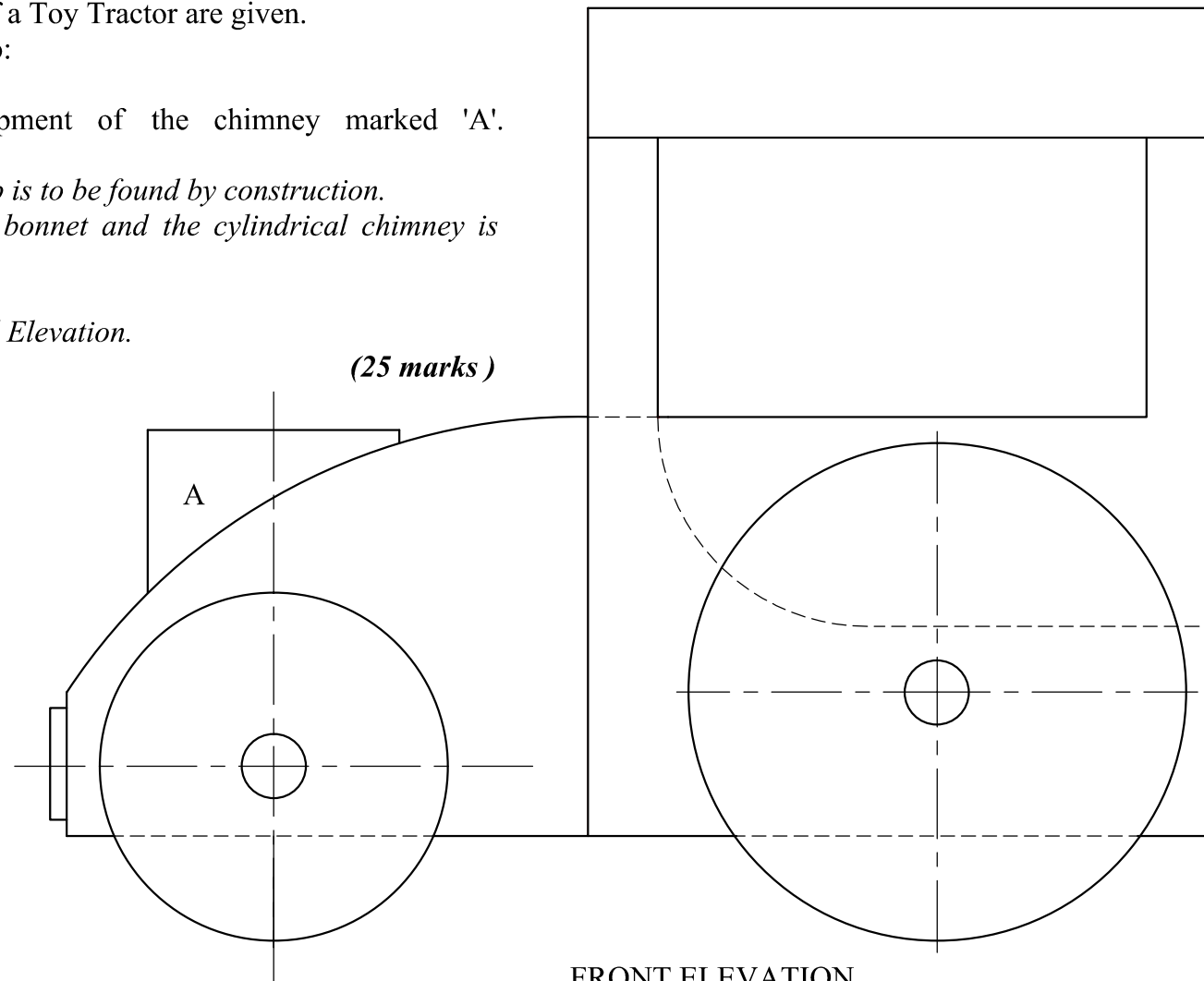
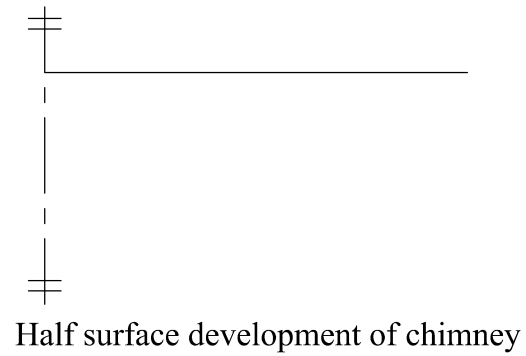
Use the given start lines and information to:

- Project an End Elevation.
- Construct a half surface development of the chimney marked 'A'.

Notes:

- The radius of the segmental cabin top is to be found by construction.
- The intersecting curve between the bonnet and the cylindrical chimney is also to be plotted by construction.
- Leave all constructions visible.
- Do not show hidden detail in the End Elevation.

(25 marks)



END ELEVATION

