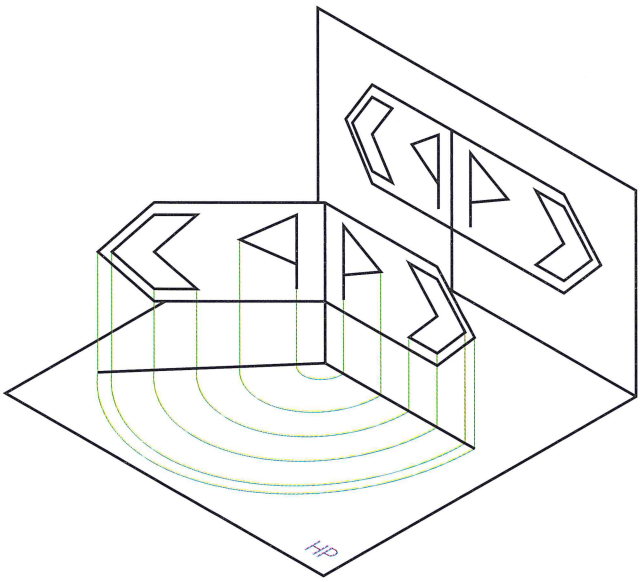
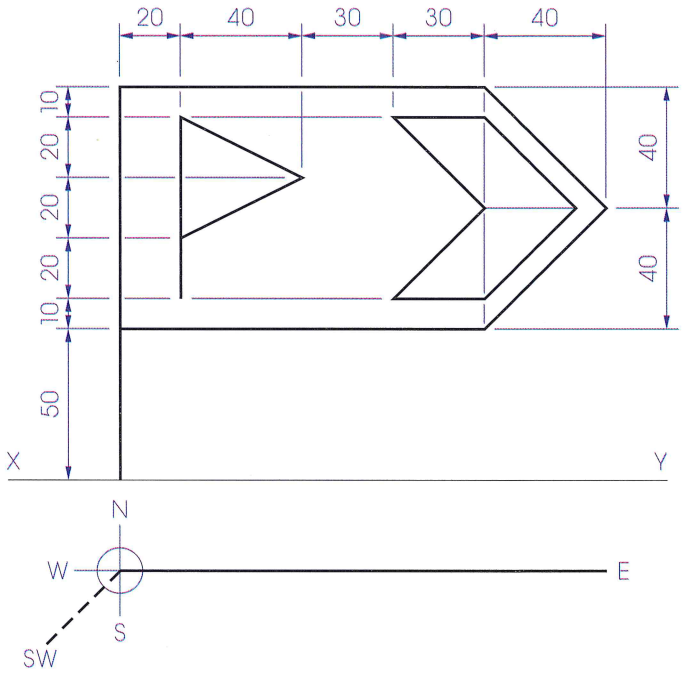
Exercises

1. The figure below shows the elevation and plan of a **sign** for a **golf course**. The sign is pointing in an easterly direction.

(a) Draw the given elevation.

(b) On the same XY line, draw the elevation when the flag is pointing in a south-westerly direction as indicated by the dotted line in the plan.

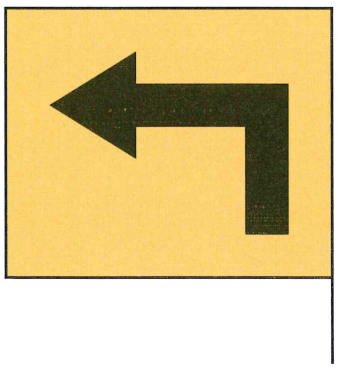


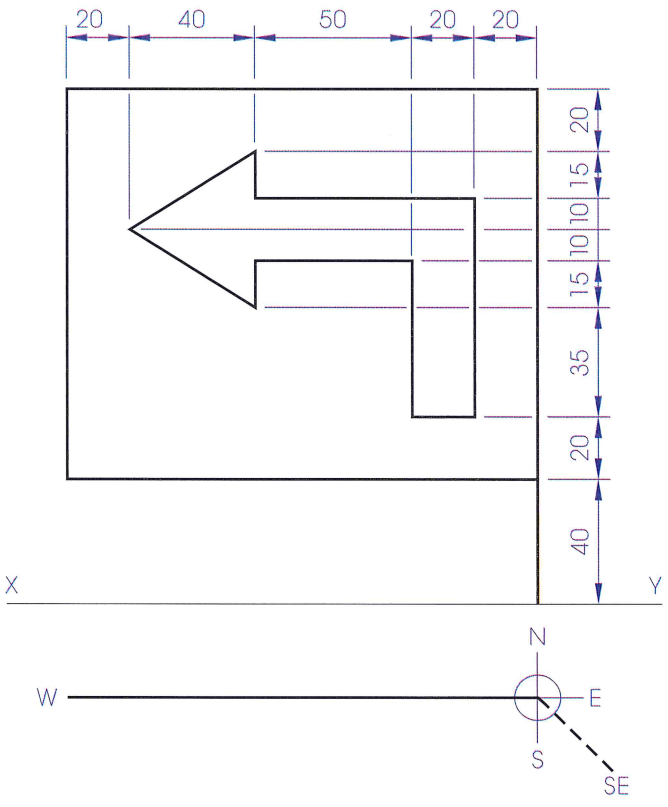


2. The figure shows the elevation and plan of a **road sign.** The sign is pointing in a westerly direction.

(a) Draw the given elevation.

(b) On the same XY line, draw the elevation when the flag is pointing in a south-easterly direction as indicated by the dotted line in the plan.

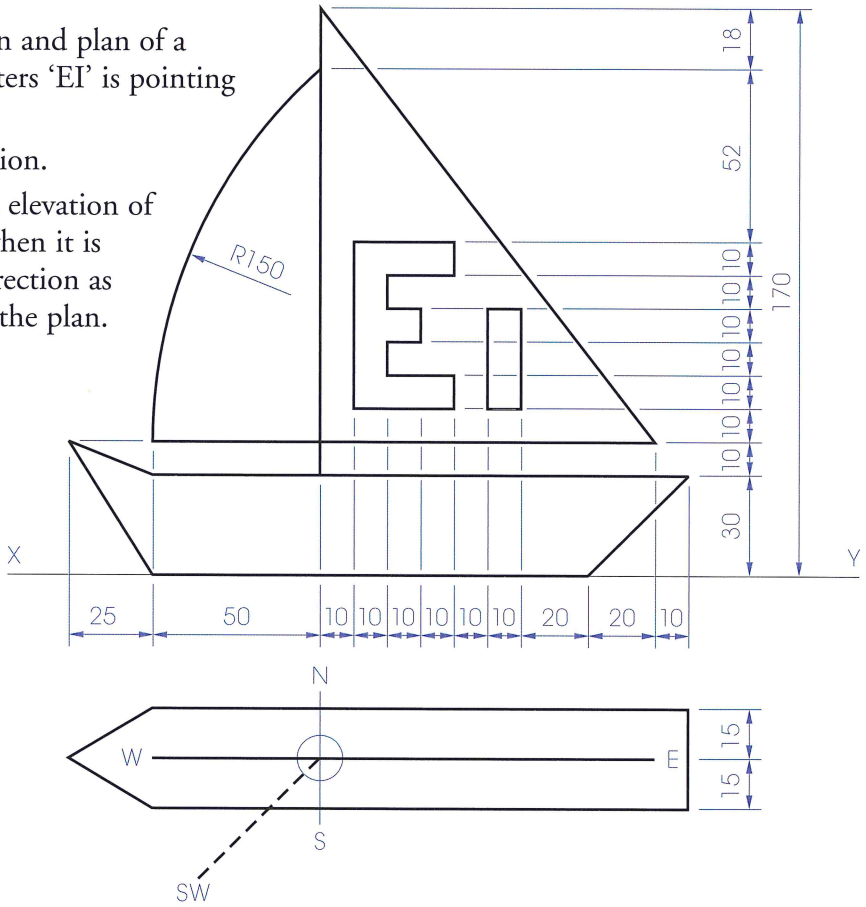




3. The figure across shows the elevation and plan of a **sailboat**. The sail containing the letters 'EI' is pointing in an easterly direction.

(a) Draw the given plan and elevation.

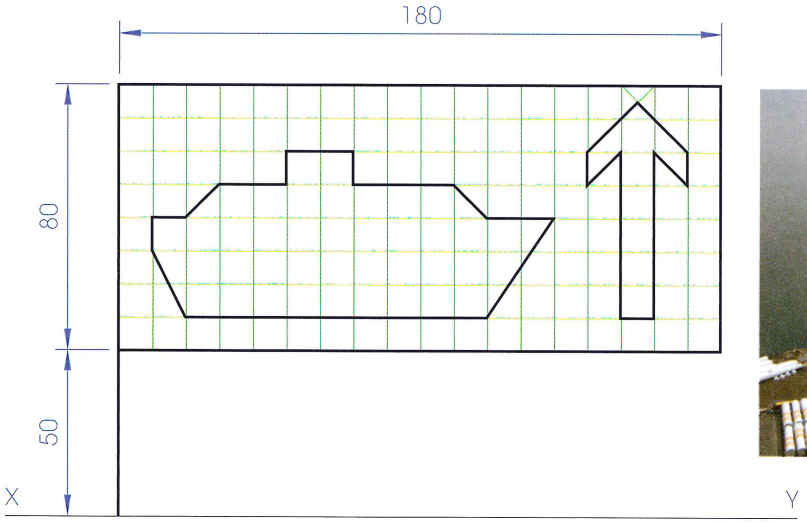
(b) On the same XY line, draw the elevation of the sail containing the letters when it is pointing in a south-westerly direction as indicated by the dotted line in the plan.



4. The figure below shows the elevation and plan of a **road direction sign** for a **ferry**. It is drawn on a 10 mm square grid. The sign is pointing in an easterly direction.

(a) Draw the given elevation.

(b) On the same XY line, draw the elevation when the sign is pointing in a south-westerly direction as indicated by the dotted line in the plan.

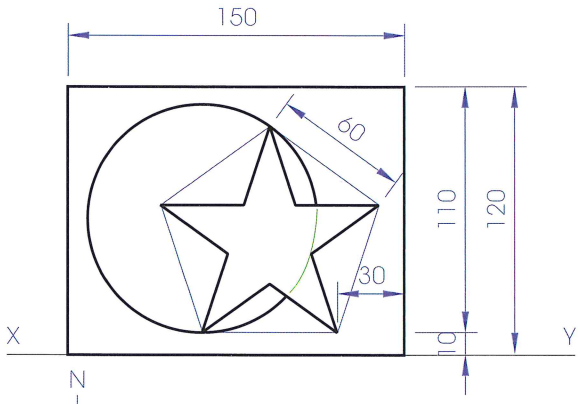


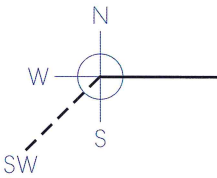
Example

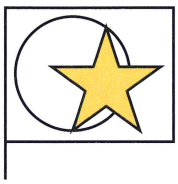
The figure shows the elevation and plan of a flag containing a logo.
The flag is flying in an easterly direction.

(a) Draw the given elevation.

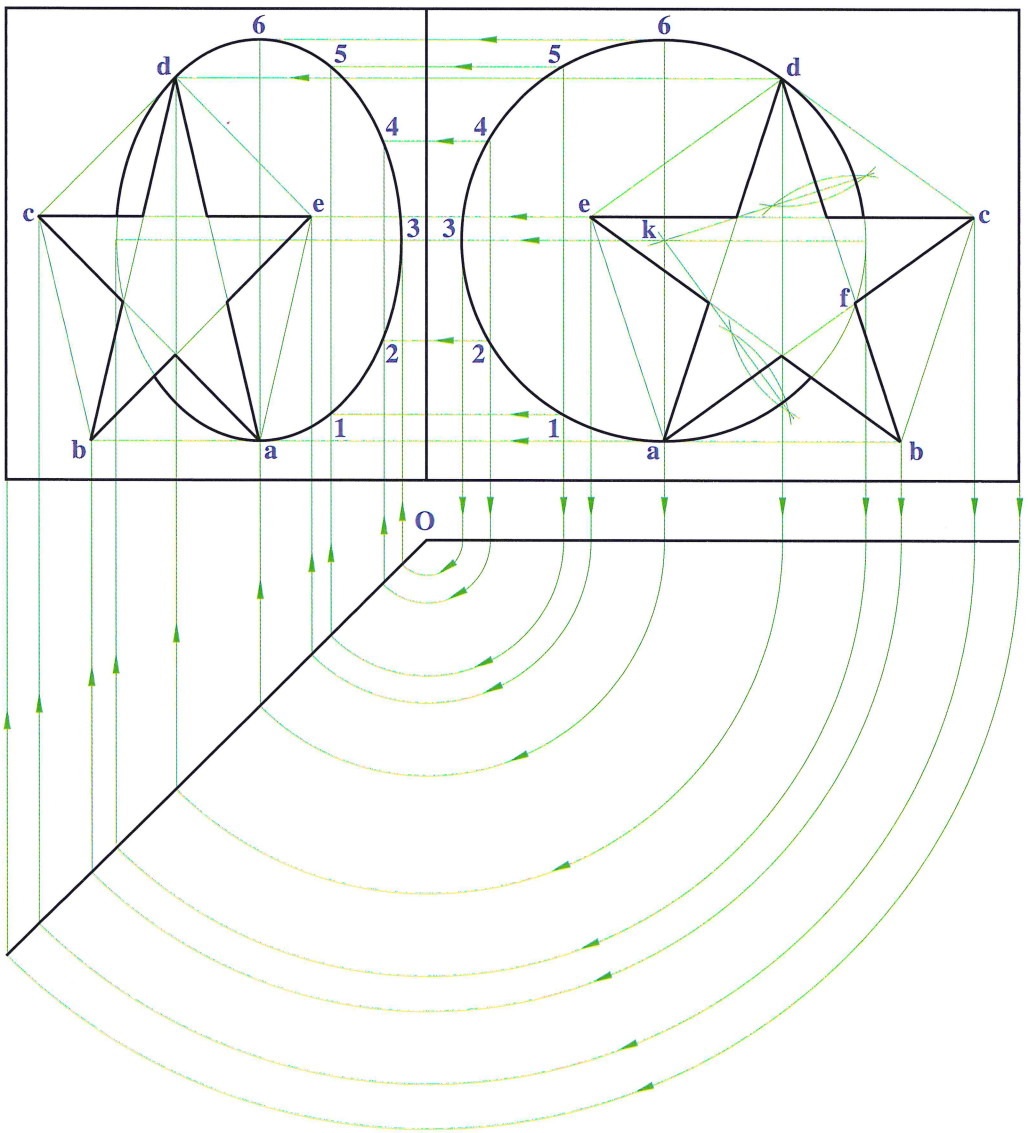
(b) On the same XY line, draw the elevation when the flag is flying in a south-westerly direction as indicated by the dotted line in the plan.







1. Draw the elevation and plan of the flag. Index the points as shown. The chords AF and DF are bisected to locate the centre K of the circle.
2. Project all points in elevation to plan. Rotate each of the points about O in plan so that all points lie in a south-westerly direction.
3. Project the rotated points to elevation. Project the elevation of the points across horizontally to locate points on the required image. Notice that the circle appears as an ellipse.

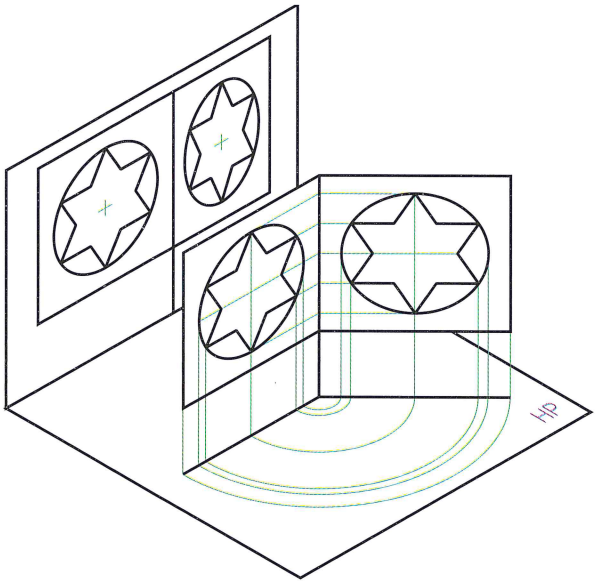


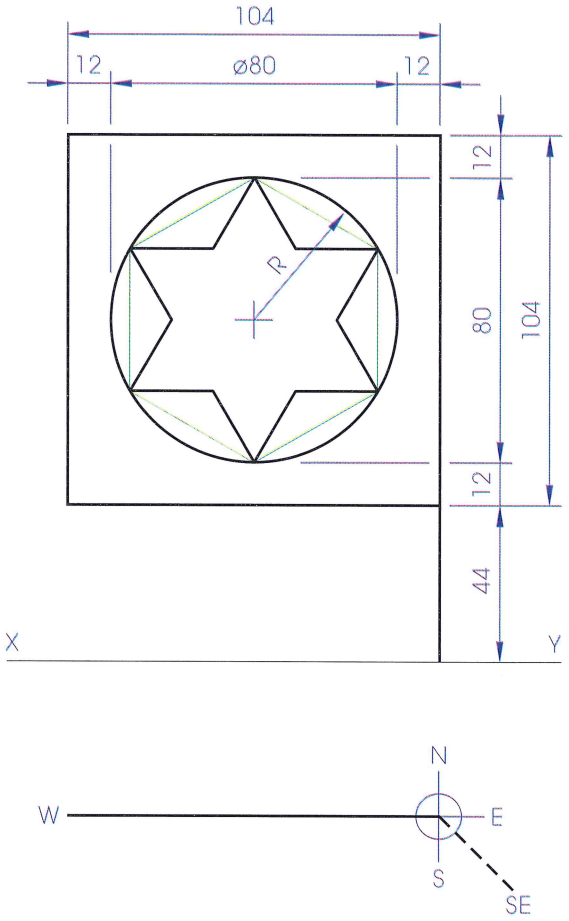
Exercises

1. The figure shows the elevation and plan of a flag containing a logo. The flag is flying in a westerly direction.

(a) Draw the given elevation.

(b) On the same XY line, draw the elevation when the flag is flying in a south-easterly direction as indicated by the dotted line in the plan.

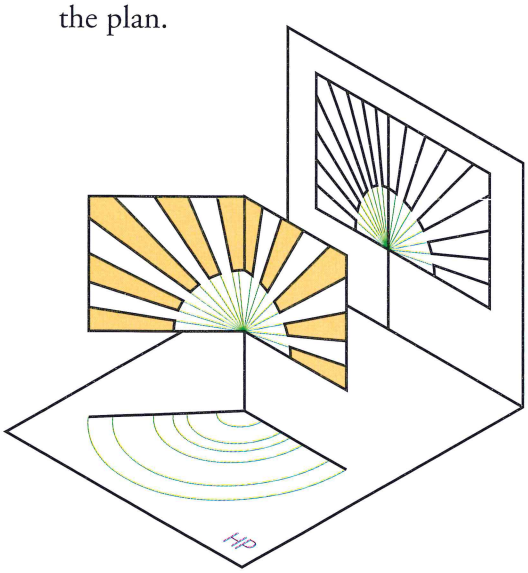


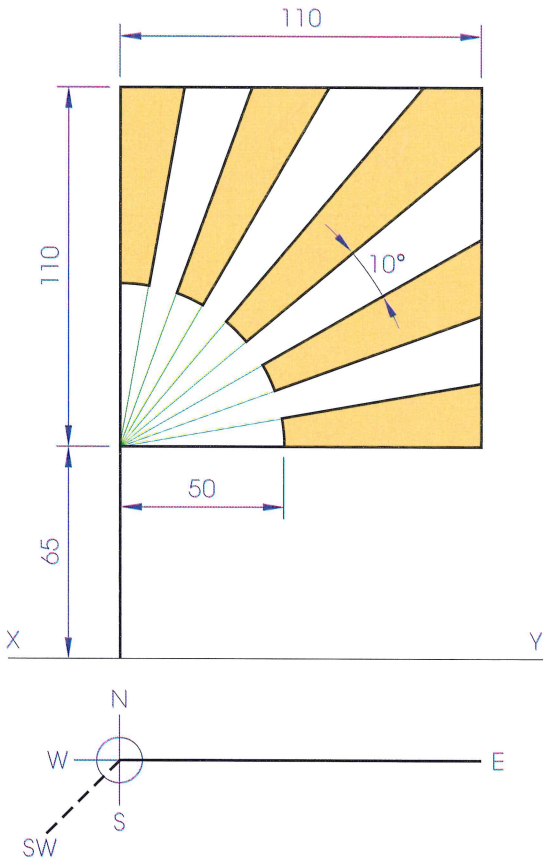


2. The figure shows the elevation and plan of a **GAA county supporters' flag**. The flag is flying in an easterly direction.

(a) Draw the given elevation.

(b) On the same XY line, draw the elevation when the flag is flying in a south-westerly direction as indicated by the dotted line in the plan.

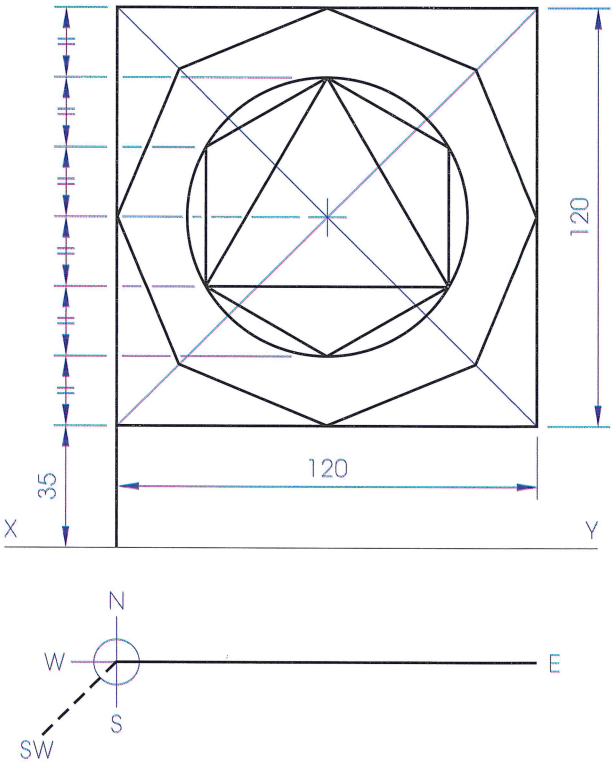




3. The figure across shows the elevation and plan of a flag containing a logo. The design contains an **equilateral triangle**, a **regular hexagon** and a **regular octagon**. The flag is flying in an easterly direction.

(a) Draw the given elevation.

(b) On the same XY line, draw the elevation when the flag is flying in a south-westerly direction as indicated by the dotted line in the plan.

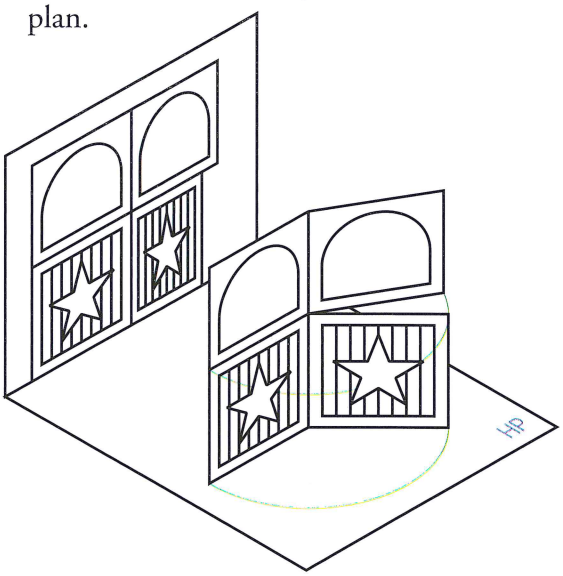


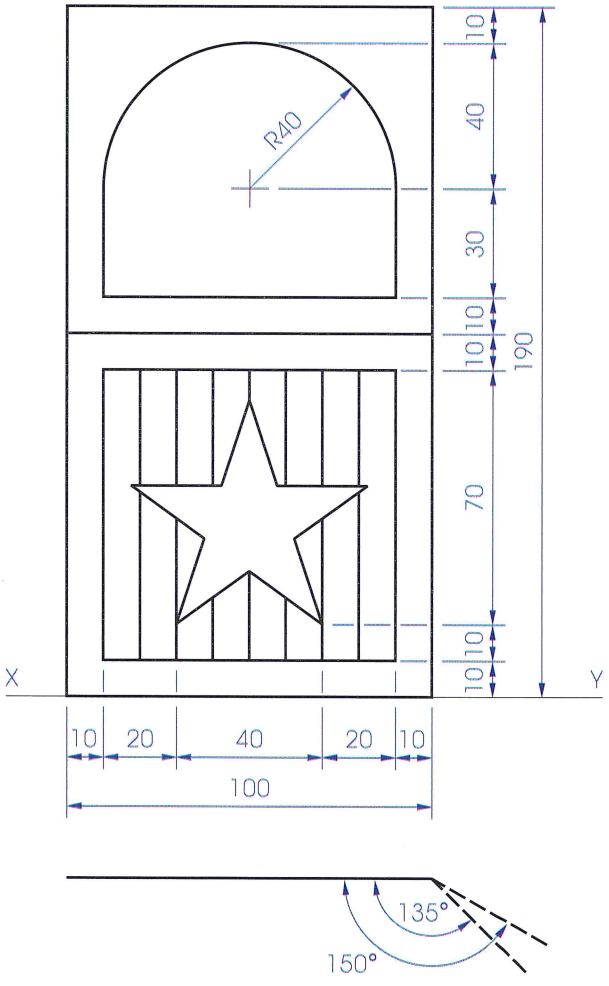
4. The figure shows the elevation and plan of a **stable door**. The door is in two parts, the top part and the bottom part.

(a) Draw the given elevation.

(b) On the same XY line, draw the elevation when the bottom part is opened through an angle of 135° as indicated by the dotted line in the plan.

(c) On the same XY line, draw the elevation when the top part is opened through an angle of 150° as indicated by the dotted line in the plan.



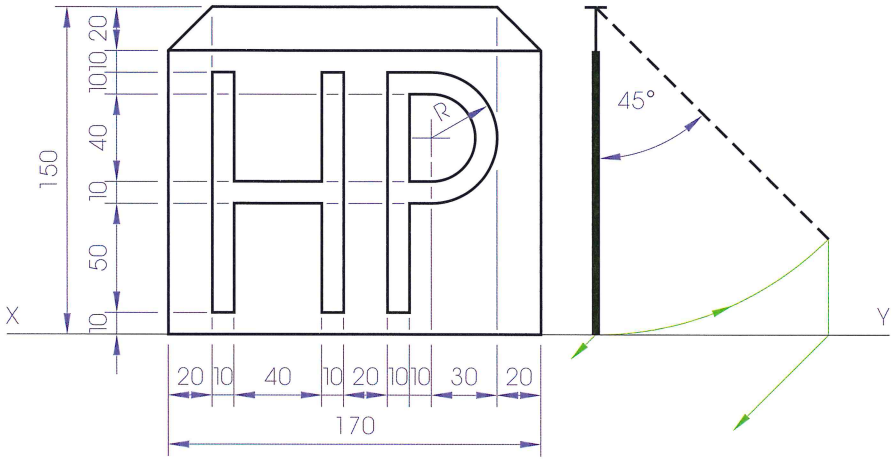


Example

The figure shows the elevation and end view of a sign for a **Hewlett Packard** cartridge box stand. The sign can rotate as shown.

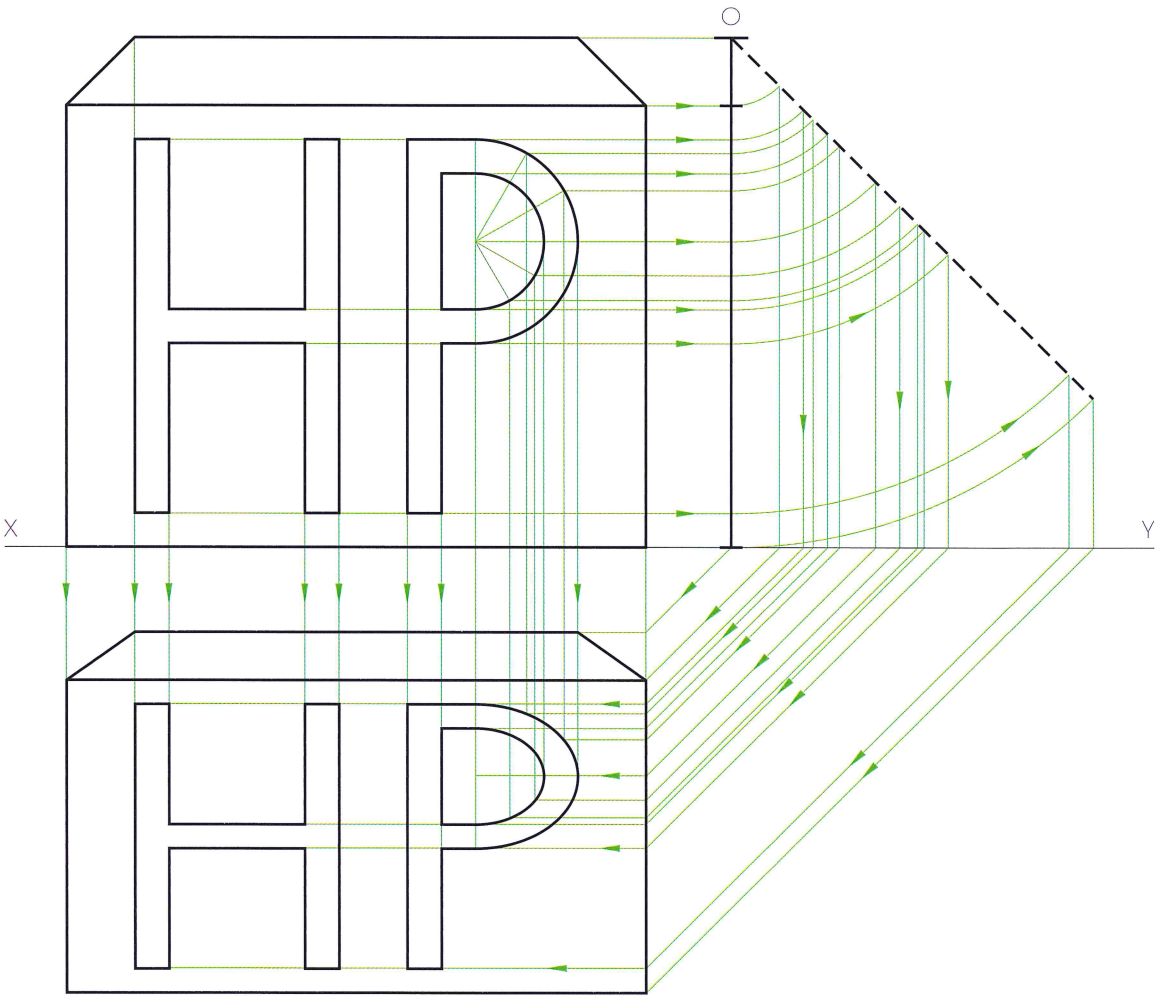
(a) Draw the given views.

(b) Draw the plan of the sign when it has rotated to a position at 45° to the vertical plane as indicated by the dotted line in the end view.



1. Draw the elevation and end view of the sign. Project all points in elevation to end view and rotate each of the points about O so that all points lie in a plane at 45° to the vertical plane as shown.

2. Project the rotated points to plan. Project the elevation of the points vertically to plan to locate points on the required image. Join the points in order to complete the solution. Notice that the semicircles appear as ellipses in plan.



When the axis of rotation appears as a point in the end view:

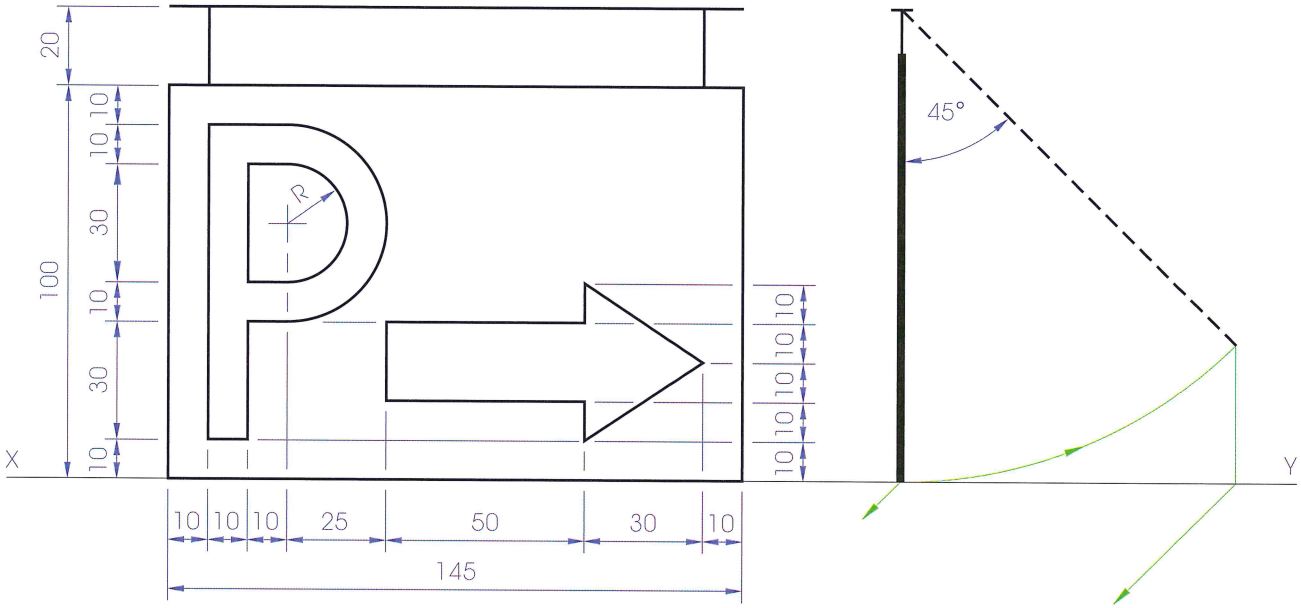
- the points will rotate in an arc of a circle in this view.
- the points will move at right angles to the axis of rotation in plan.

Exercises

1. The figure shows the elevation and end view of a **hanging sign** which can sway in the wind.

(a) Draw the given views.

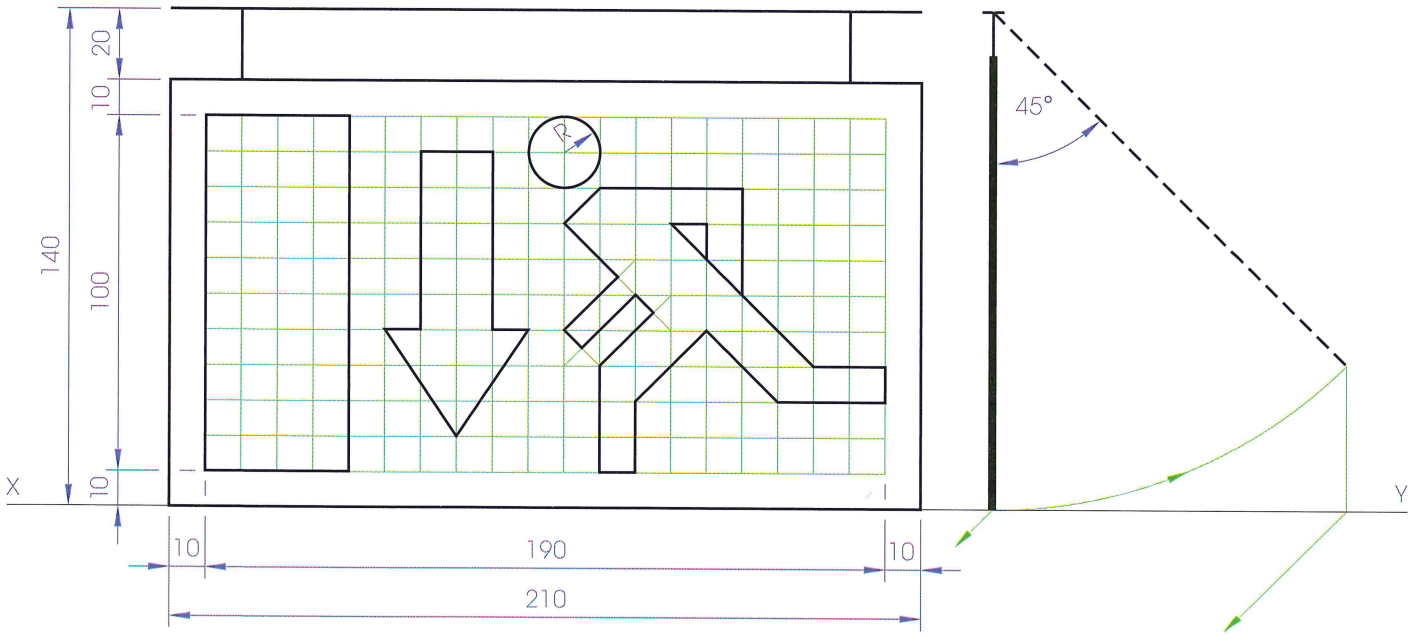
(b) Draw the plan of the sign when it has blown to a position at 45° to the vertical plane as indicated by the dotted line in the end view.



2. The figure below shows the elevation and end view of an **emergency exit sign** which can rotate. The sign is drawn on a grid of 10 mm squares.

(a) Draw the given views.

(b) Draw the plan of the sign when it has blown to a position at 45° to the vertical plane as indicated by the dotted line in the end view.



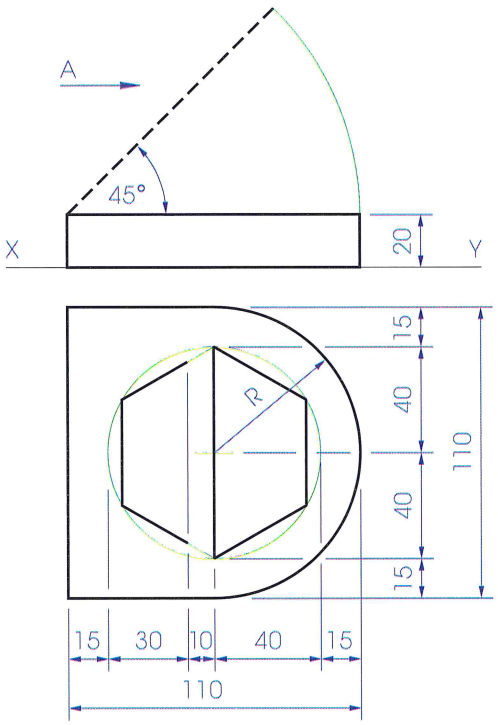
Example

The elevation and plan of a **CD case** are shown in the figure across.

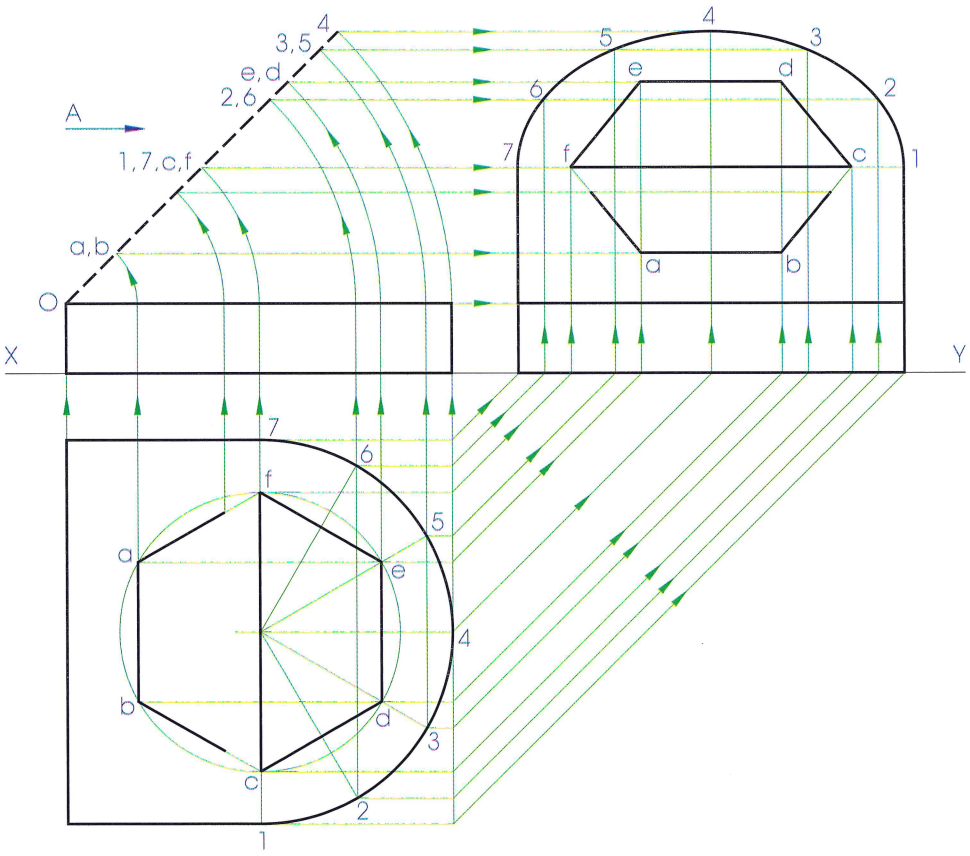
The cover of the case contains a logo based on a regular hexagon.

(a) Draw the given elevation and plan.

(b) Project an end elevation in the direction of arrow A to show the cover of the case in the open position, as indicated by the broken line in elevation.



1. Draw the elevation, plan and end view of the CD case. Project all points in plan to elevation and rotate each of the points about O so that all points lie in a plane at 45° to the horizontal plane.
2. Project the rotated points to end view. Project the plan of the points to the end view to locate points on the required image. Join the points in order to complete the solution. The semicircle appears as an ellipse in the end elevation.



When the axis of rotation appears as a point in the elevation:

- the points will rotate in an arc of a circle in this view.
- the points will move at right angles to the axis of rotation in plan.