Given the plan and elevation of a pentagonal-based oblique pyramid and the development of a label. Draw the plan and elevation of the pyramid when the label is wrapped around it. Point p on the label is to be placed on point p on the pyramid, and the axis pq is to be placed on the edge O,1. Fig. 11.69

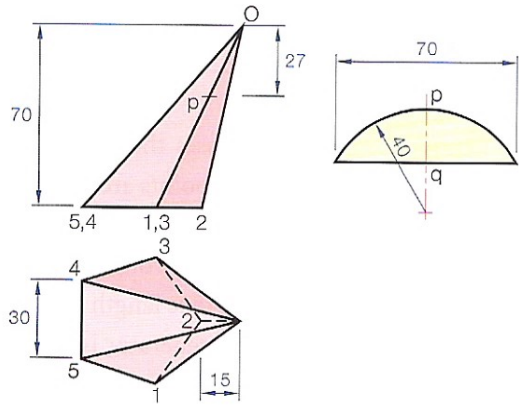


Fig. 11.69

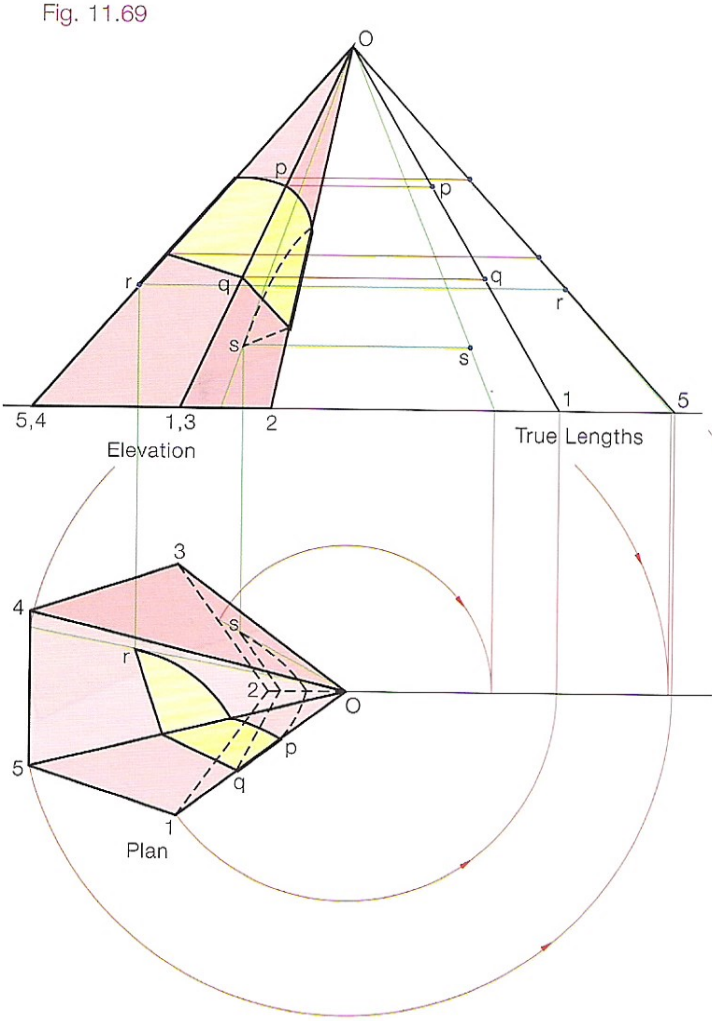
(1) Develop the surface of the pyramid as explained earlier. Place the label in position on the development.

(2) Transfer distances Op and Oq onto the true length of O,1 and project across to the elevation.

(3) Points on O,5 on the development are transferred to the true length of O,5 and projected over to the elevation.

(4) Points on O,2 in the development can be transferred directly to O,2 in the elevation as this is a true length.

(5) Points r and s are found by drawing a line from the apex in the development through them, to lines 4,5 and 2,3 respectively. These lines can be found in plan. Find their true lengths. Transfer Or and Os from the development to the true lengths, then project to elevation and plan, Fig. 11.70.



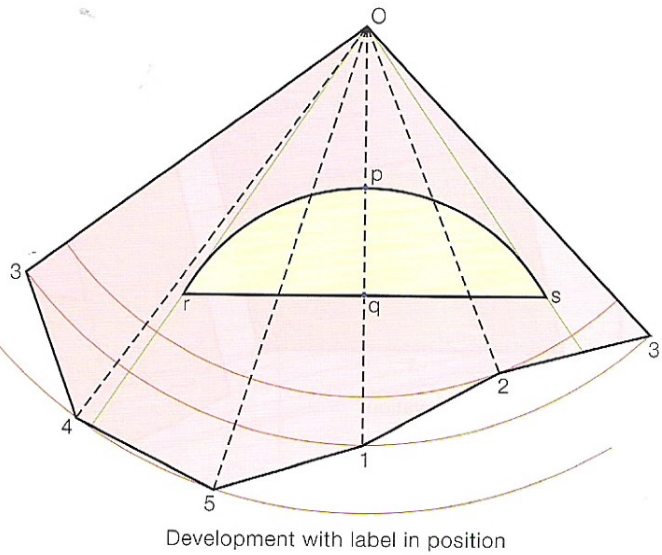
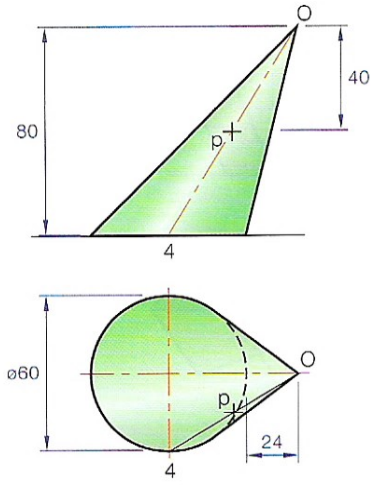


Fig. 11.70

Given the plan and elevation of an oblique cone and the development of a label. Draw the plan and elevation of the cone when the label is wrapped around it. Point p on the label is to be placed on point p on the cone and axis pq is to be placed on the generator O,4. Fig. 11.71



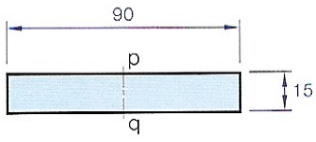


Fig. 11.71

(1) The true lengths of the radians are needed for the development.

(2) Place the label in position.

(3) Distances are transferred from the development to these true lengths and projected across to the elevation.

(4) Special treatment is given to the label corners a, b, c and d.

Fig. 11.72b

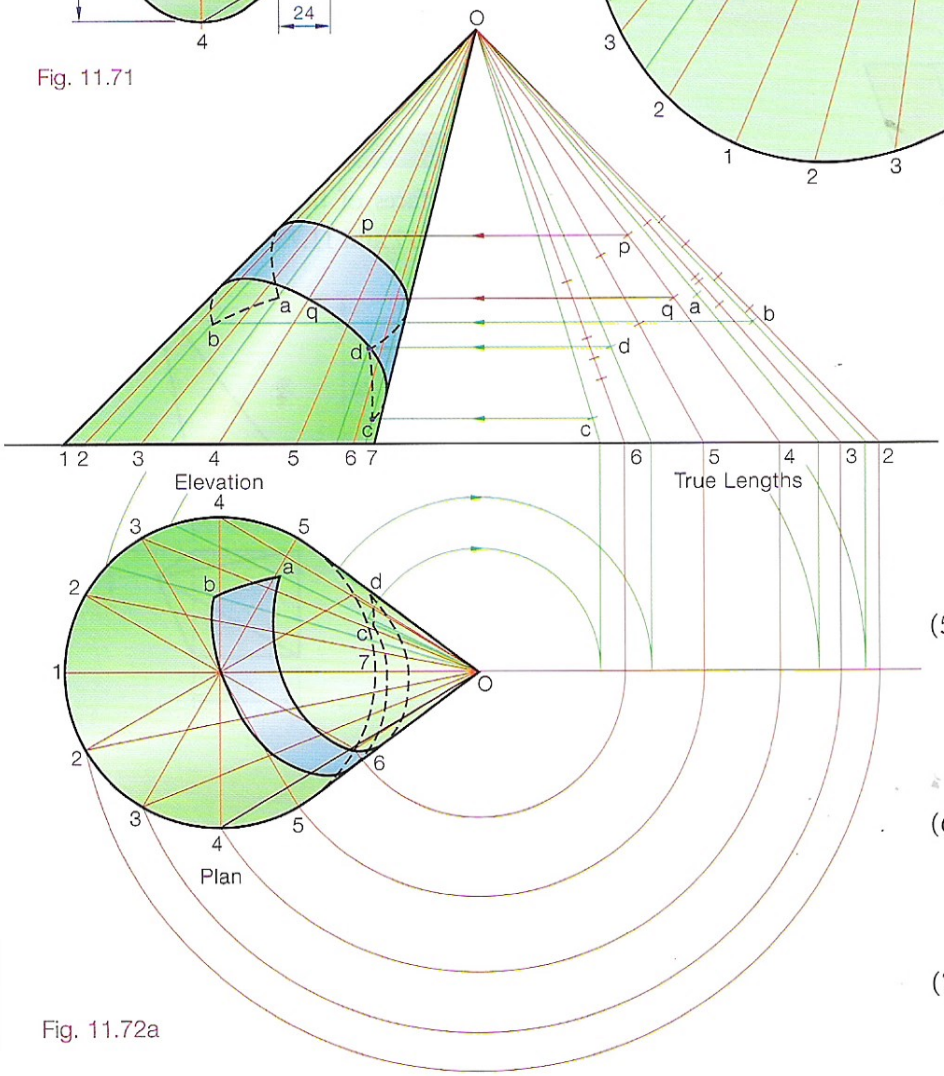


Fig. 11.72a

(5) A radian is drawn through corner b, for instance, on the development. This radian is found in plan and then in elevation, Fig. 11.72a.

(6) Find the true length of the radian in elevation and transfer distance Ob from the development onto this true length.

(7) Point b is projected across to elevation and plan, Fig. 11.72b.

Activities

HIGHER LEVEL

Q1. TO Q3.

Develop the surfaces of the oblique prisms shown in Figures 11.73, 11.74 and 11.75.

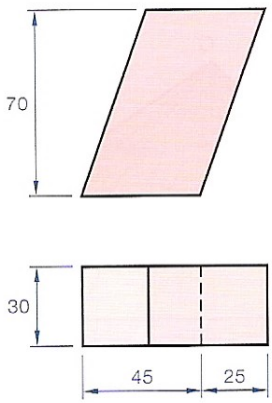


Fig. 11.73

Q1. Fig. 11.73

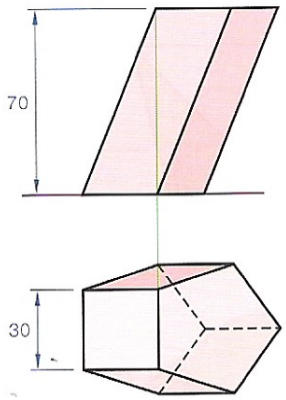


Fig. 11.74

Q2. Fig. 11.74

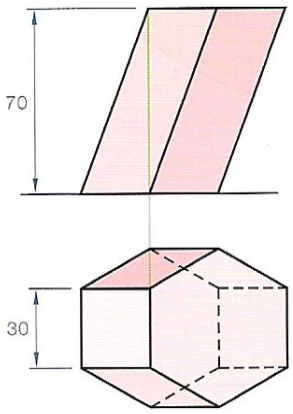


Fig. 11.75

Q3. Fig. 11.75

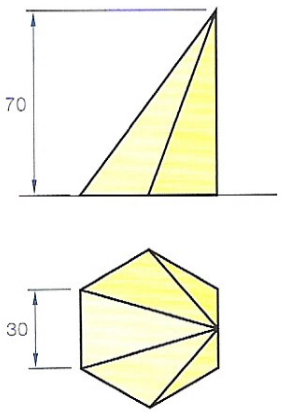


Fig. 11.77

Q5. Fig. 11.77

Q4. TO Q6.

Develop the surfaces of the oblique pyramids shown, Figures 11.76, 11.77 and 11.78.

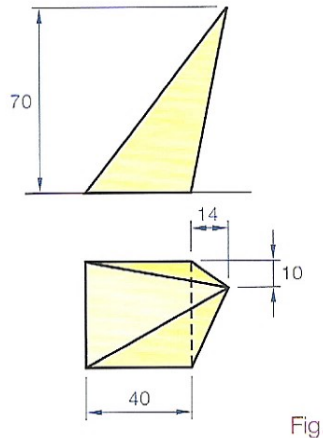


Fig. 11.76

Q4. Fig. 11.76

Q6. Fig. 11.78

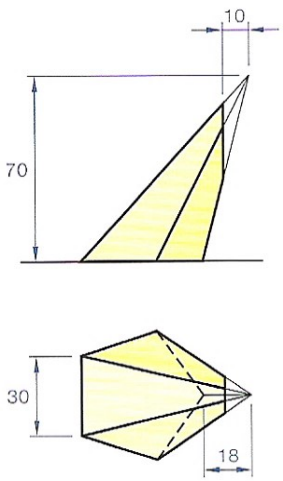


Fig. 11.78

Q7 TO Q9

Develop the surface of the oblique cylinders and oblique cones shown in Figures 11.79, 11.80 and 11.81.

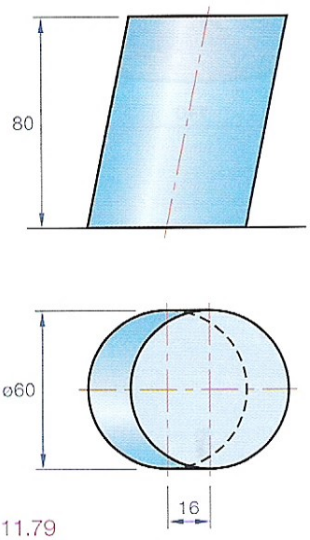


Fig. 11.79

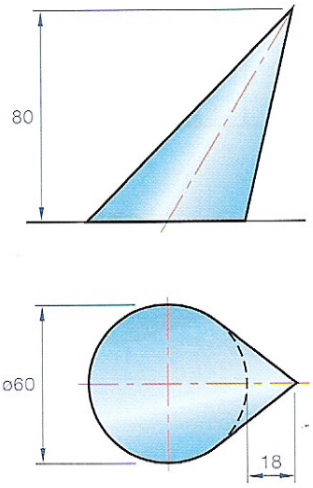


Fig. 11.80

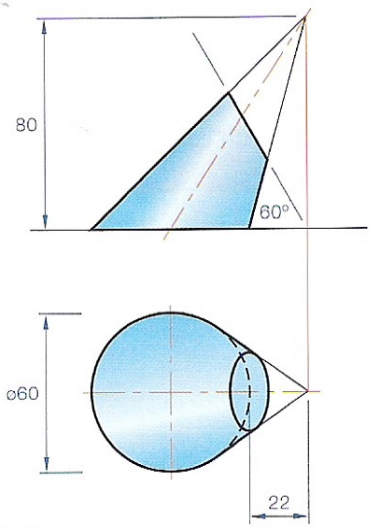


Fig. 11.81

Q10. Given the plan and elevation of an oblique cylinder and the development of a label. Draw the plan and elevation of the oblique cylinder when the label is wrapped around it. Point p on the label is to be placed on point p on the cylinder. Axis pq on the label is to line up with radian 1,1 on the cylinder. Fig. 11.82

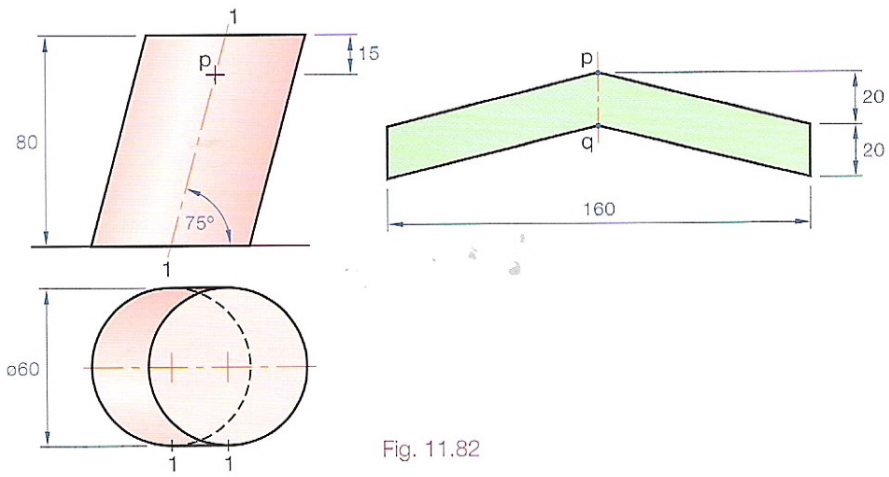


Fig. 11.82

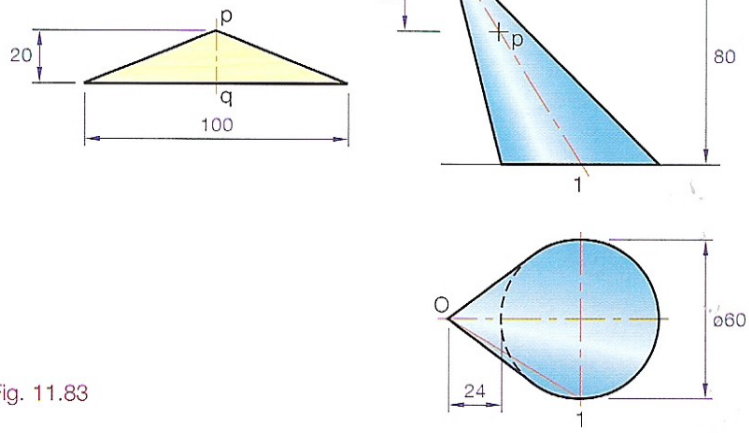


Fig. 11.83

Q11. Wrap the label shown in Fig. 11.83 around the oblique cone, placing point p on the label on point p on the cone and placing axis pq on the radian line O,1. Draw the plan and elevation of the oblique cone when the label is in position.

Q12. Draw the elevation and plan of the oblique prism when the label is wrapped around it. The minor axis is to line up with edge 1,1.

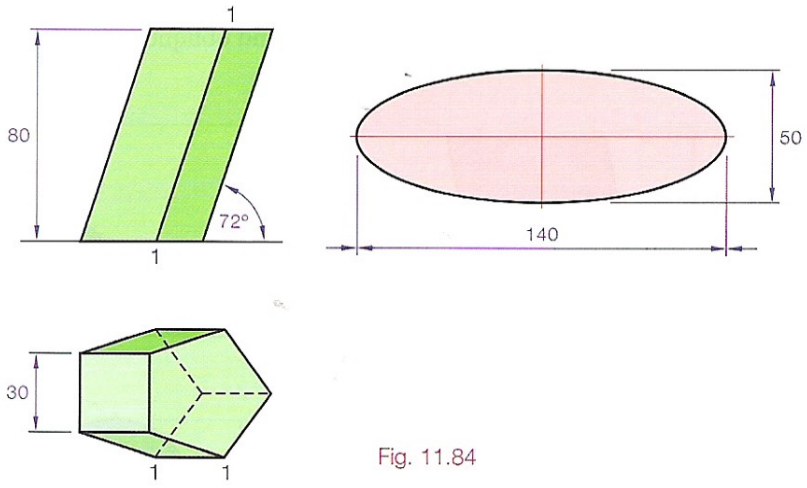


Fig. 11.84