Activities

Using the limits method find the line of intersection between the following solids. In each case draw a front elevation, end elevation and plan of the solids.
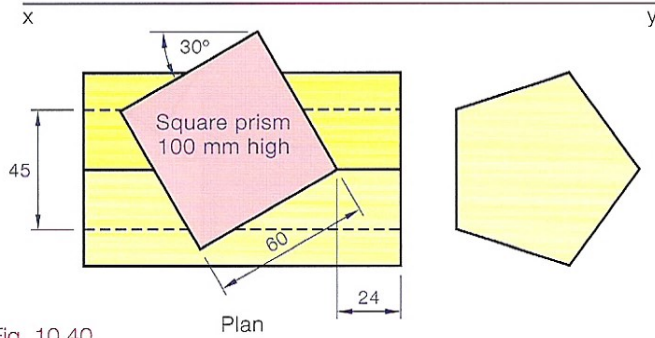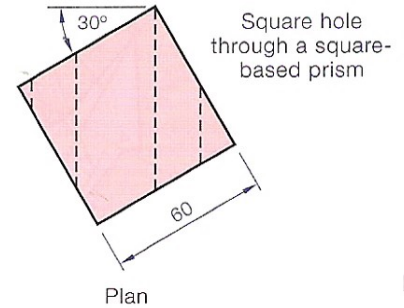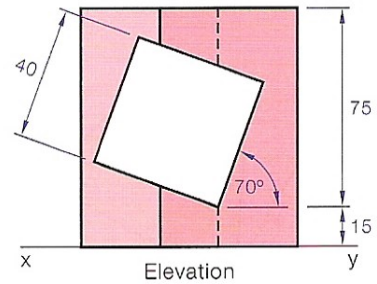

Fig. 10.40

Square prism 100 mm high

Plan

Q1. Fig. 10.40

Elevation

Square hole through a square-based prism

Plan

Fig. 10.41

Q2. Fig. 10.41

Elevation

Plan

Fig. 10.42

Q3. Fig. 10.42

Elevation

Plan

Fig. 10.43

Q4. Fig. 10.43

Equilateral triangular prism, centrally placed

Fig. 10.44

Q5. Fig. 10.44

Fig. 10.45

Q6. Fig. 10.45

Solve the following questions using horizontal sections. In each case draw a front elevation, end elevation and plan showing the full line of intersection.

Elevation

Plan

Fig. 10.46

Q7. Fig. 10.46
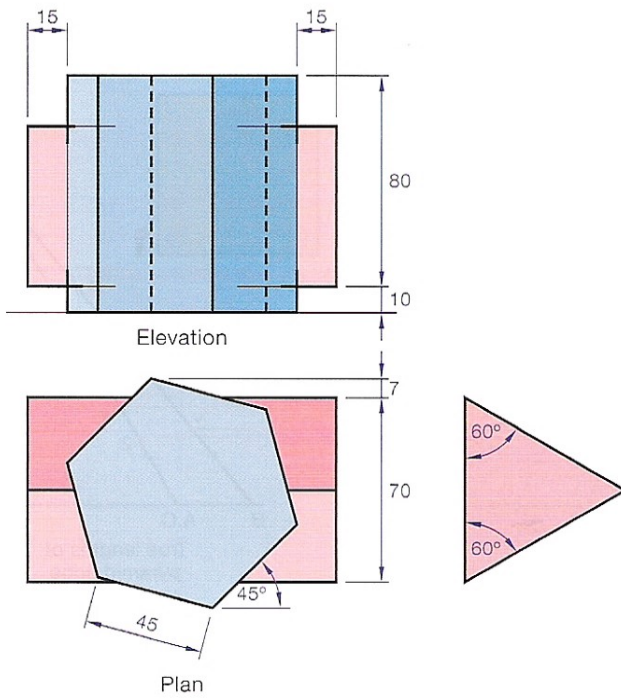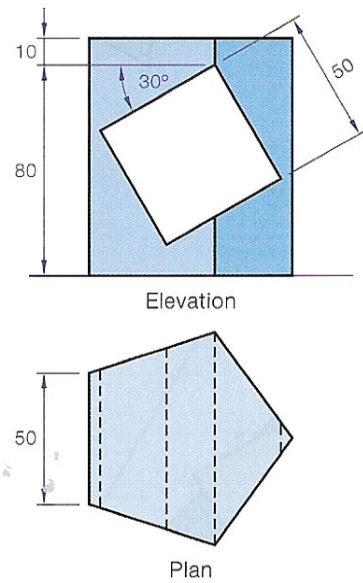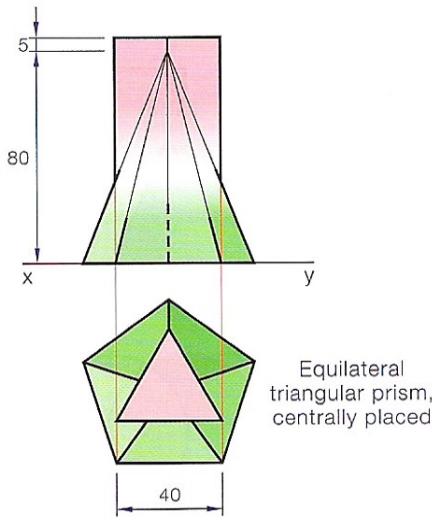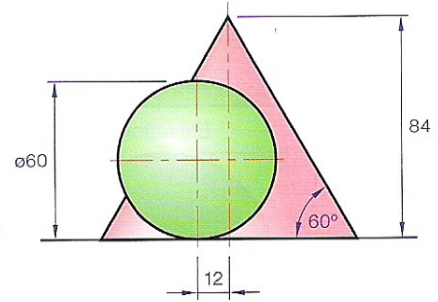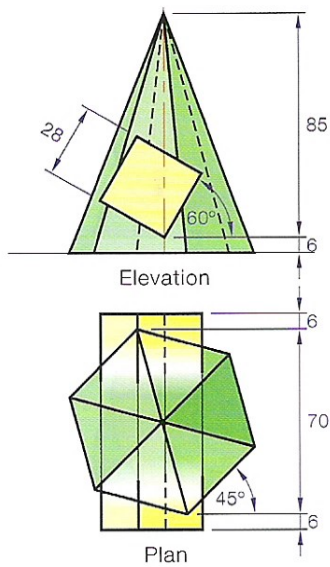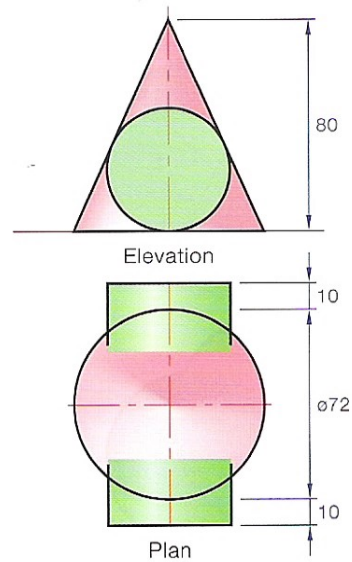

Elevation
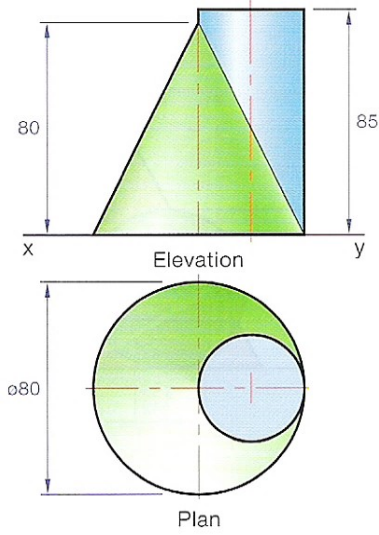
Plan

Fig. 10.47

Q8. Fig. 10.47
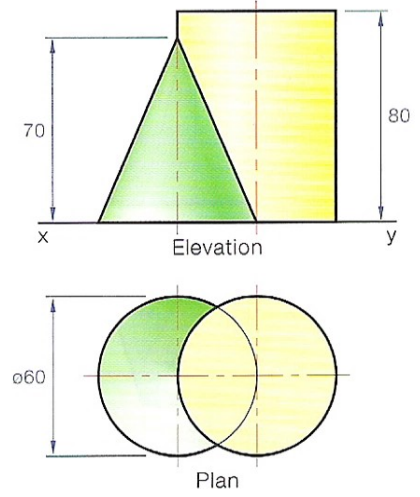
Fig. 10.48

Q9. Fig. 10.48
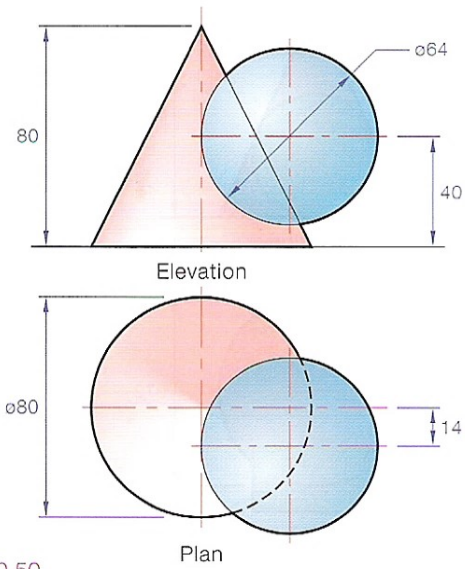

Fig. 10.49

Q10. Fig. 10.49
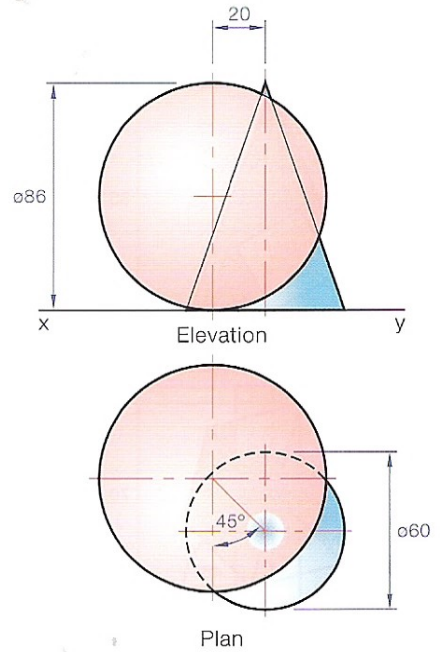

Fig. 10.50

Q11. Fig. 10.50

Fig. 10.51

Q12. Fig. 10.51

Solve the following questions using vertical sections. In each case draw a front elevation, end elevation and plan showing all lines of intersection.
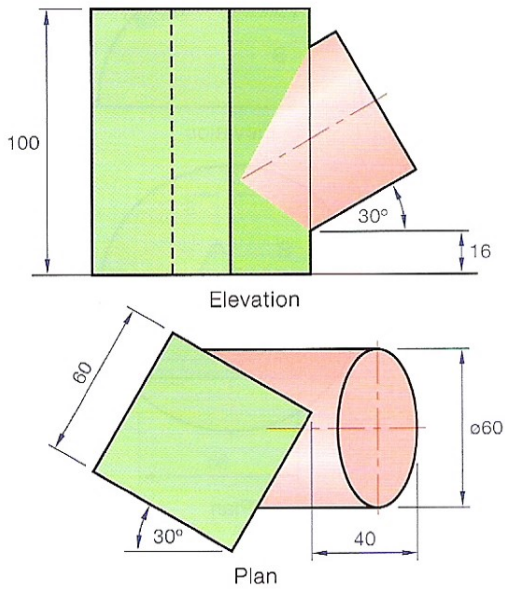

Elevation

Plan

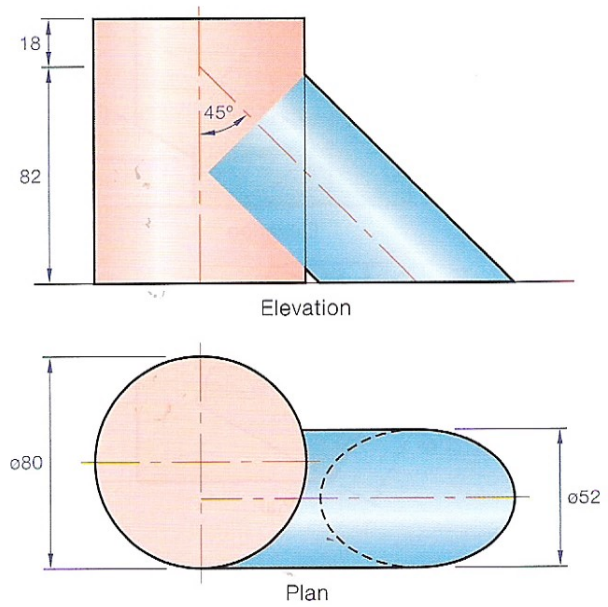Fig. 10.52

Q13. Fig. 10.52

Elevation

Plan

Fig. 10.53

Q14. Fig. 10.53

For each of the following questions determine the line of intersection between the solids A and B. Develop the surfaces of the solid A.
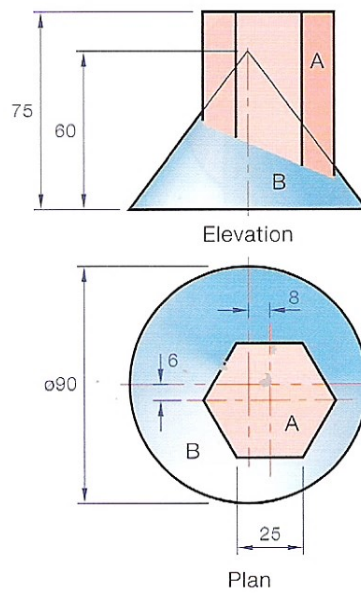
Q15. Fig. 10.54
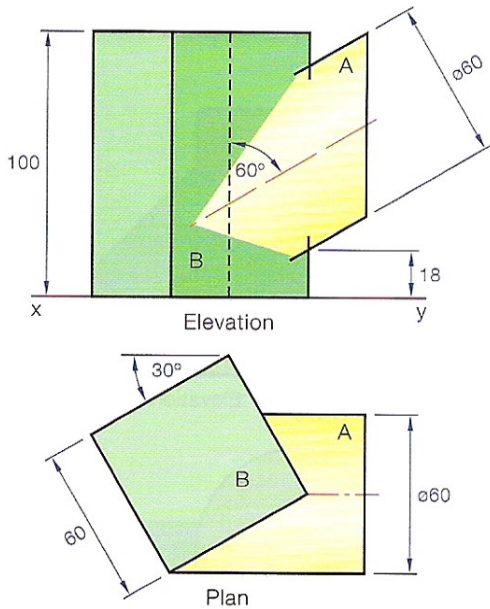

Elevation

Plan

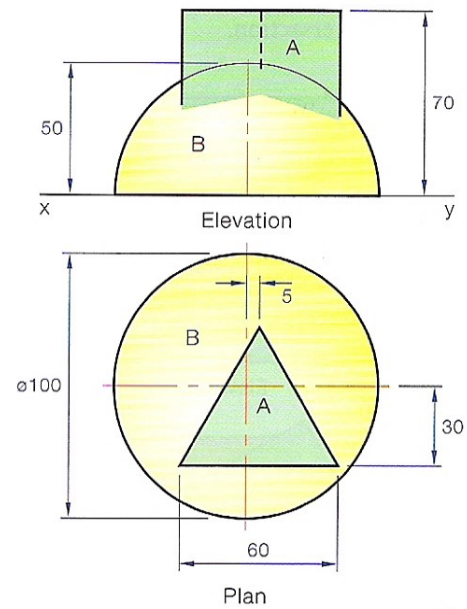Fig. 10.54

Fig. 10.56
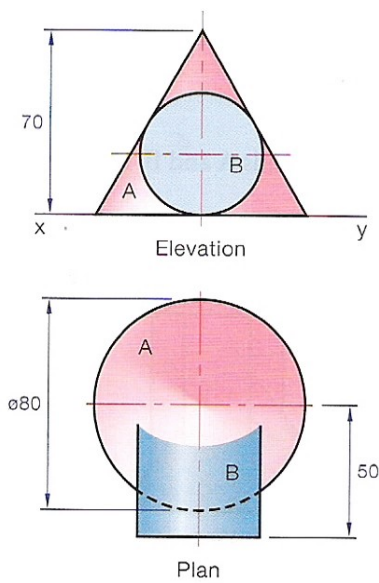
Q16. Fig. 10.55

Fig. 10.55
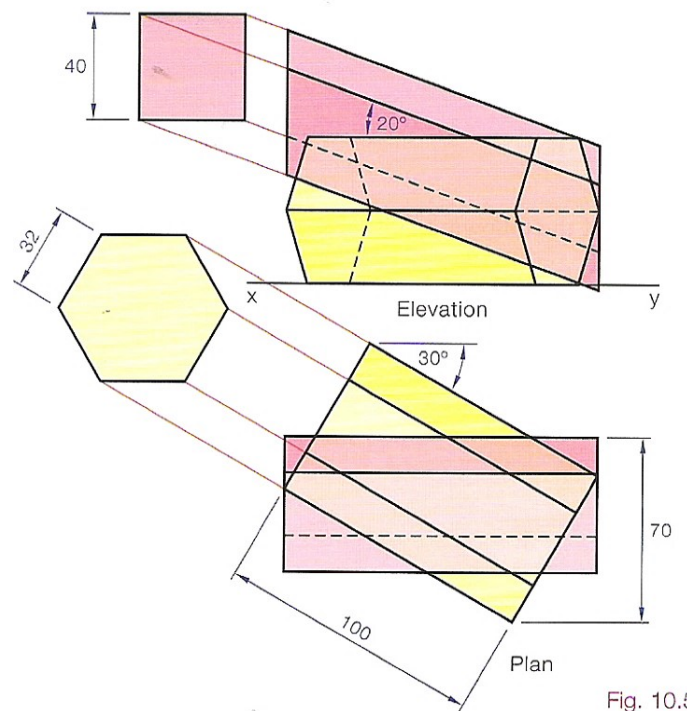
Q17. Fig. 10.56

Fig. 10.57

Q18. Fig. 10.57

Fig. 10.58

Q19. Shown in Fig. 10.58 are the incomplete plan and elevation of a hexagonal-based prism being intersected by an inclined square-based prism. Draw the projections of the solids and find all lines of intersection.

Q20. Fig. 10.59 shows the incomplete plan and elevation of a truncated equilateral triangular prism of 100 mm side resting on the horizontal plane. This solid is penetrated by a 60 mm side equilateral triangular prism which is inclined at 30° to the HP. Draw the projections of the solids showing all interpenetration lines.
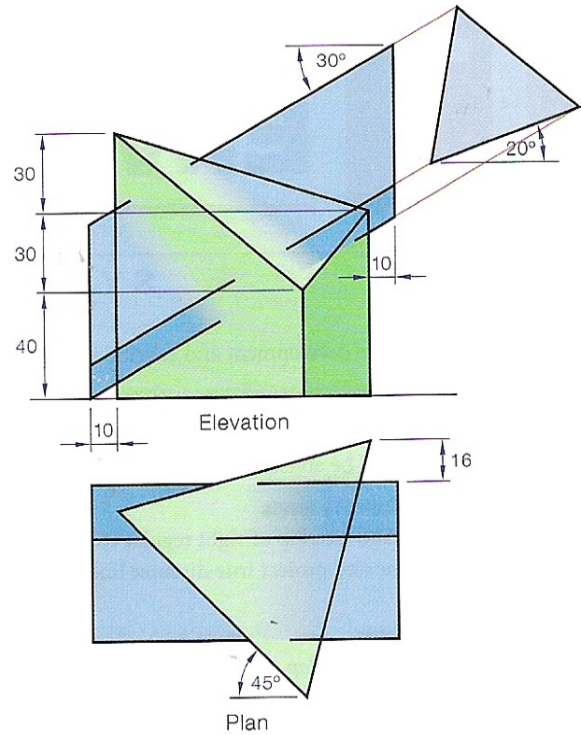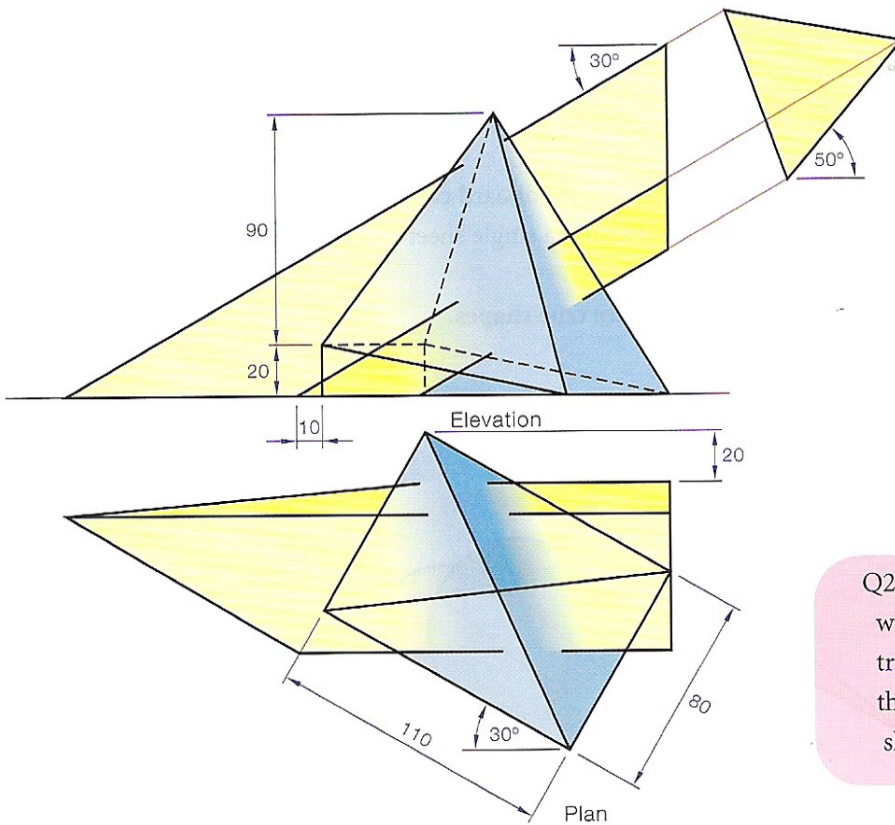

Elevation

Plan

Fig. 10.59

Elevation

Plan

Fig. 10.60

Q21. Fig. 10.60 shows a shaped solid which is penetrated by an equilateral triangular prism of side 70 mm. Draw the given views and complete them to show all lines of interpenetration.

HIGHER LEVEL