SECTION OF SOLIDS

1. A triangular prism of side of base 30mm and 70mm long rests with its base on HP such that one of its rectangular faces is parallel to VP and nearer to it compared to the opposite longer vertical edge. If a section plane inclined at 60^o to HP cuts the axis of the prism at a height of 55mm, draw the sectional top view, front view and true shape of the section.
2. A cube of 40mm side rests with one of its square faces on HP such that all the vertical square faces are equally inclined to VP. A section plane perpendicular to HP and inclined at 30^o to VP passes through the cube at a distance of 20mm from its axis and in front of it. Draw the sectional view and true shape of the section.
3. A square prism of sides 50mm & height 80mm rests with its base on HP with two of its vertical faces equally inclined to VP. A section plane perpendicular to VP and inclined to HP at 60^o cuts the prism so as to pass through a point on the axis 10mm below its top end. Draw its front view, sectional top view and true shape of the section.
4. A pentagonal prism having base side 30mm and axis length 60mm, lies on one of its base edges on HP such that its axis is parallel to VP and inclined to HP at 60^o. It is cut by an AIP inclined at 60^o to HP and passing through the highest corner of the prism. Draw the front view, sectional top view and true shape of the section.
5. A hexagonal prism of 25mm side of base and 65mm height rests on its base on HP with one of its smaller edges parallel to VP. It is cut by an AIP inclined at an angle of 60^o to HP. The AIP intersects the axis of the prism at a height of 35mm above the base. Draw the sectional top view and true shape of the section.
6. A hexagonal prism of 25mm side of base and 60mm height rests on HP with one of its rectangular faces such that axis is parallel to both HP and VP. It is cut by a vertical section plane inclined at an angle of 30o to VP cuts the axis at a distance 25 mm from one of its ends. Draw the sectional front view and true shape of the section.
7. A cylinder with diameter 50mm and length of axis 70mm rests on HP on its base. An AIP inclined at 60^o to HP cuts the cylinder so as to pass through the center of the top face. Draw its front view, sectional top view and true shape of the section.
8. A cylinder with a 50mm base diameter and a 90mm axis is resting on its base on HP. It is cut by an AIP such that the true shape of the section is a semi-ellipse which has 70mm long semi-major axis. Draw its projections, true shape and determine the inclination of AIP.
9. A triangular pyramid of 45mm side and axis 65mm long rests with one of its base corners on HP such that the two adjacent base edges passing through the corner on HP are equally inclined to HP. An AIP inclined at 60^o to HP passes through the corner on which the prism rests. Draw the sectional view and true shape of the section.
10. A tetrahedron of sides 60mm is resting on HP on one of its faces with an edge perpendicular to VP. It is cut by an AIP such that the true shape of the section is a rectangle with a 20mm smaller side. Set the required cutting plane and draw the sectional top view and obtain the true shape of the section.
11. A square pyramid of base 35mm side and axis 65mm long rests with its base on HP, with all the edges of the base equally inclined to VP. It is cut by a section plane inclined at 60^o to HP and passing through a point on the axis at 30mm from the base. Draw the sectional view and true shape of the section.

12. A pentagonal pyramid, with base 30mm side and axis 70mm long is resting on its base on HP with an edge of the base parallel to VP and nearer to VP. It is cut by an AIP inclined at 60^o to HP bisecting the axis of the pyramid. Draw the sectional top view, and true shape of the section.
13. A hexagonal pyramid, base 30mm side and height 75mm long, is resting with its base on HP with one of the base edges perpendicular to VP. It is cut by an AIP inclined at 60^o to HP which bisects the axis. Draw its sectional top view, and true shape of the section.
14. A cone of base 60mm diameter and height 70mm rests with its base on HP. It is cut by an AIP bisecting the axis and inclined at 45^o to HP. Draw its sectional top view. Obtain the true shape of the section and identify it.
15. A cone of base 50mm diameter & axis 60mm long rests with its base on HP. It is cut by a section plane perpendicular to VP so that the true shape of the section is a parabola of maximum double ordinate 40mm. Draw the sectional top view & true shape of the section.
16. A cone of base 50mm diameter and axis 60mm long rests with its base on HP. It is cut by a section plane perpendicular to VP so that the true shape of the section is a parabola of maximum double ordinate 40mm. Draw the sectional top view and true shape of the section.