

### Example 3:

In MP: construct related views of the right circular cone, the base of the cone lies in the plane  $\alpha(40,40,50)$ , the main vertex (the apex)  $V[20,65,60]$  and the point  $M[0,60,30]$  on the lateral surface area are given.

CONSTRUCTION: (to construct the solid, we need the plane of the base, the axis of the solid and a centre and any point of the base)

1. construct the perpendicular line to the plane of the base passing through the point  $V$  (the plane of the base is given and we know, that the axis is perpendicular to the plane and that the main vertex lies on it) ...  $o$
2. to get the centre of the base construct the intersection of the axis and the plane of the base ...  $S$
3. to get the point of the base construct the intersection of the line  $VM$  and the plane of the base ...  $A$
4. construct the base which is a circle given by the centre  $S$  and one point  $A$ , but the projection of the circle will be an ellipse (use the rotation of the plane of the base)
5. construct the tangents from the point  $V$  to the base

### Example 4:

In MP: construct related views of the regular pyramid, a regular pentagon as the base, the main vertex  $V[45,85,80]$ , the point  $A[10,20,?]$  of the base and the plane  $\alpha(40,40,50)$  of the base are given.

CONSTRUCTION:

1. construct the perpendicular line  $o$  to the plane  $\alpha$  passing through the point  $A$  (we know that the axis of the solid is perpendicular to the plane of the base and that the point  $A$  lies on it) ...  $o$
2. to get the centre  $S$  of the base construct the intersection of the line  $o$  and the plane of the base ...  $S$
3. construct the base which is a regular pentagon given by the centre  $S$  and one point  $A$ , but the projection of the pentagon will not be a regular pentagon (use the rotation of the plane of the base)