

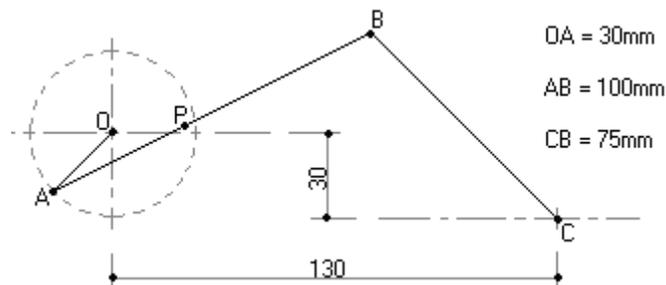
S.4 Holiday work (Technical Drawing)

- **ATTEMPT ALL QUESTIONS**

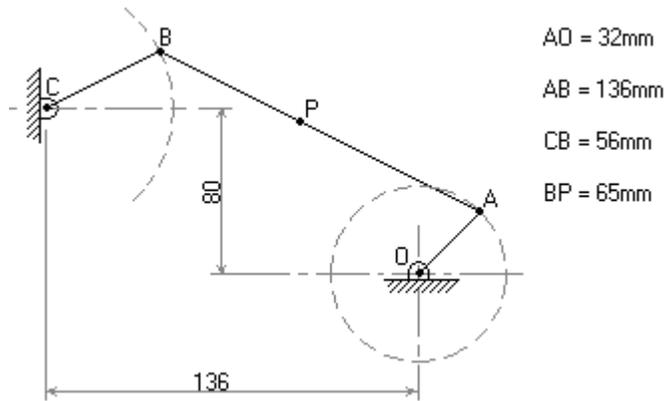
- Construct a diagonal scale of 40mm to 10mm to read up to 20mm by 0.02mm.
 - Indicate on your scale the following readings.
 - 14.8mm.
 - 16.2mm.
 - 20.6mm.

- The figure below shows a kind of a link mechanism. Crank OA rotates about the fixed centre O whilst crank CB oscillates about the fixed centre C. The lever AB is pin-jointed at both ends.

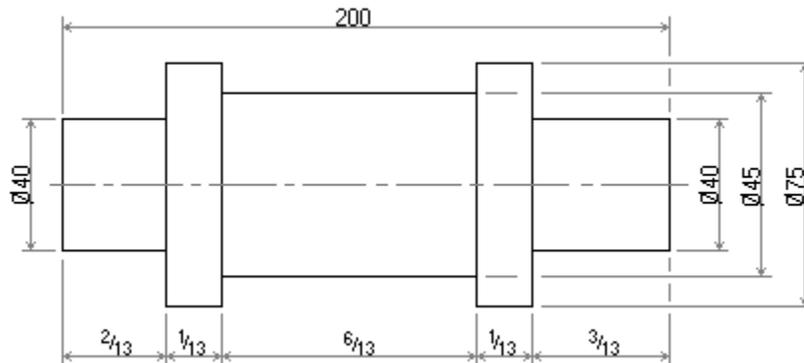
 - Construct the locus of P, which is 60mm from B on the lever AB, for a complete revolution of crank OA.
 - State the total angle of oscillation of crank CB.



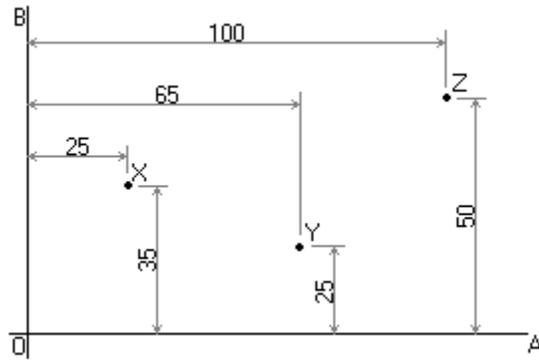
- Construct a plain scale, 20mm to represent 10mm, 50mm long, to read 1mm.
Show the following readings on your scale; 21mm, 47mm, 50mm.
 - Using the plain scale, draw a regular pentagon of sides 25mm long. Transform this pentagon into a triangle of equal area.
Name the triangle thus formed.
- A mechanism is shown in the figure below. A crank OA rotates uniformly about O. A link AB is attached to the rod CB which swings about point C. Plot the locus of P for one revolution of OA.



- 5 (a) A spindle is shown in the figure below. The lengths of the various diameters are expressed as fractions of the total length of the spindle. Draw the spindle showing clearly how the parts are divided geometrically.

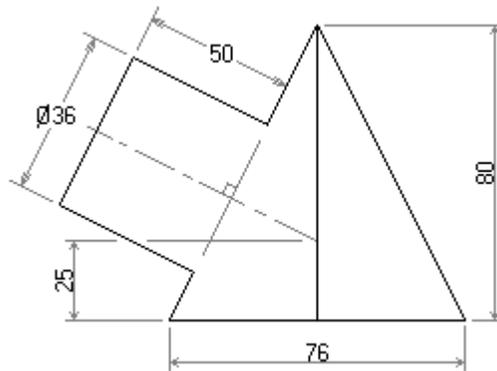


- (b) Three points X, Y and Z are shown in the figure below. Their relative positions from axes OA and OB are as indicated. Locate these points and draw an arc to pass through them.



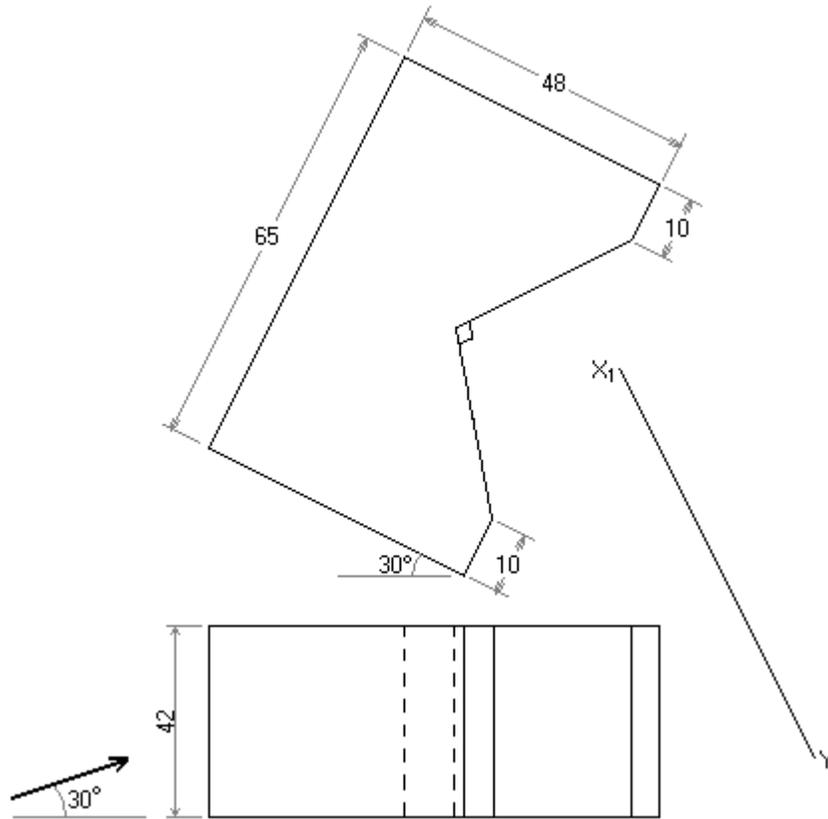
6. The figure below shows the front elevation of a square based pyramid intersected by a cylinder. Draw the following views showing the curves of intersection on the;

- (a) Front elevation.
- (b) The plan.



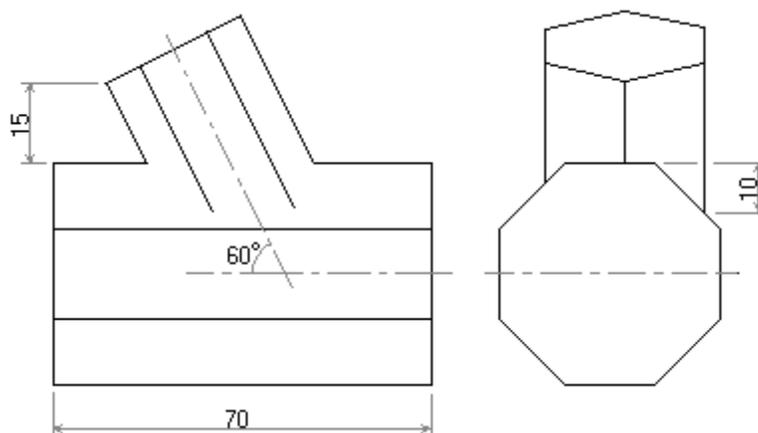
7. The orthographic views of a vee block drawn in third angle projection are shown in the figure below.

- (a) Draw the two given views.
- (b) Project an auxiliary plan on the X_1-Y_1 line. Show all hidden details.



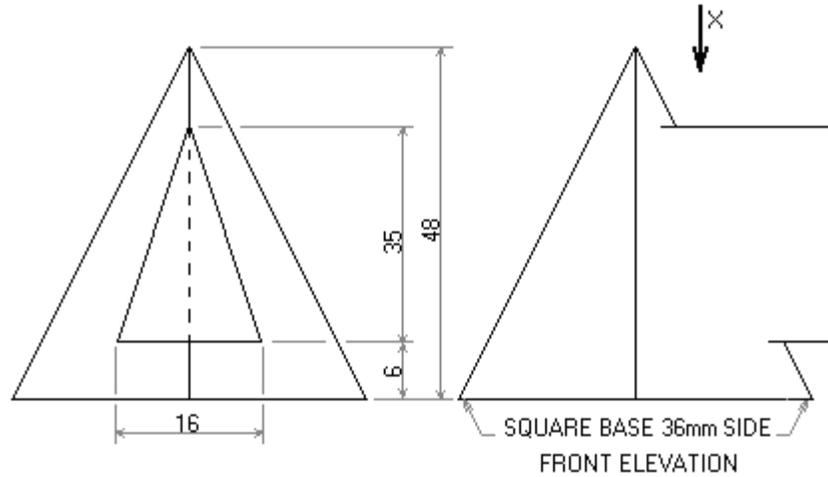
8. The figure below shows an octagonal prism of sides 25mm intersecting with a hexagonal prism of sides 20mm.

Determine the shape of interpenetration between them.



9. The figure below shows two views of a right regular square based pyramid pierced by a triangular prism. Draw;

- (i) A complete front elevation.
- (ii) A plan in the direction of arrow X.
- (iii) The full development of the surface of the pyramid.



10. The front and plan of a bracket are shown in the figure below. Draw an auxiliary elevation in the direction of arrow X. Show hidden details.

