

A


JUNIOR CERTIFICATE EXAMINATION, 1996

TECHNICAL GRAPHICS — HIGHER LEVEL

THURSDAY 13 JUNE — AFTERNOON, 2.00—5.00



TOTAL MARKS 400 (Sections A and B)

EXAMINATION NUMBER		
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CENTRE STAMP		
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INSTRUCTIONS

- (a) Answer any twelve of the short answer questions in Section A (120 marks) using the spaces provided.
All questions in Section A carry equal marks.
- (b) Answer any four of the six questions in Section B (280 marks).
All questions in Section B carry equal marks.
- (c) Examination Number must be distinctly marked in the space provided above and on each sheet of paper used.
- (d) All construction lines must be clearly shown.
- (e) All measurements are in millimetres.
- (f) Hand up this answer book (Section A) at the end of the examination.

For Examiner's use only	
QUESTION	MARK
Section A (Total)	
Section B Q1	
Q2	
Q3	
Q4	
Q5	
Q6	
TOTAL 	
GRADE 	

WARNING

**THIS ANSWERBOOK MUST BE HANDED UP
AT THE END OF THE EXAMINATION
OTHERWISE MARKS WILL BE LOST.**

1. Correctly fill in the labels for each of the diagrams by selecting from the table shown.

TABLE OF CIRCLE TERMS

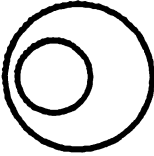
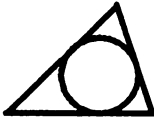
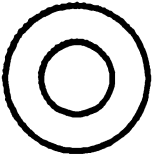


Diameter

Concentric

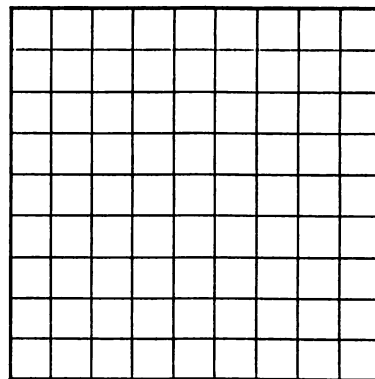
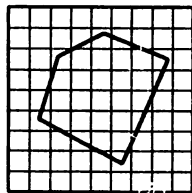
Circumscribed

Inscribed

Eccentric

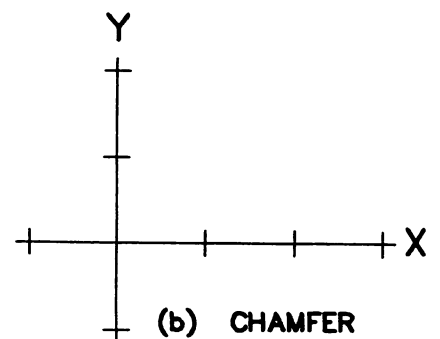
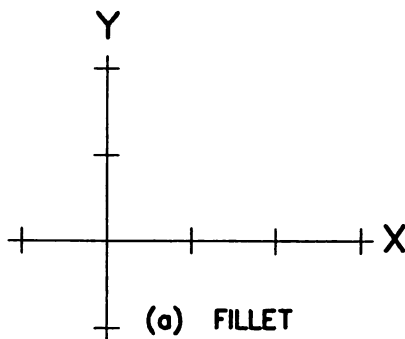
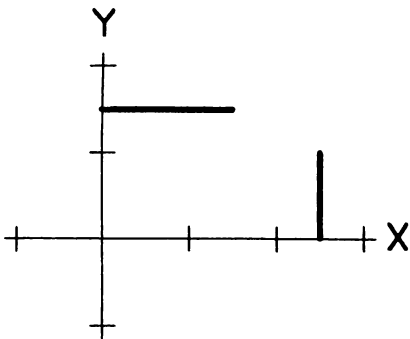
2. The figure shown on the left is to be enlarged to twice its original size. Draw the figure twice full size on the enlarged grid.



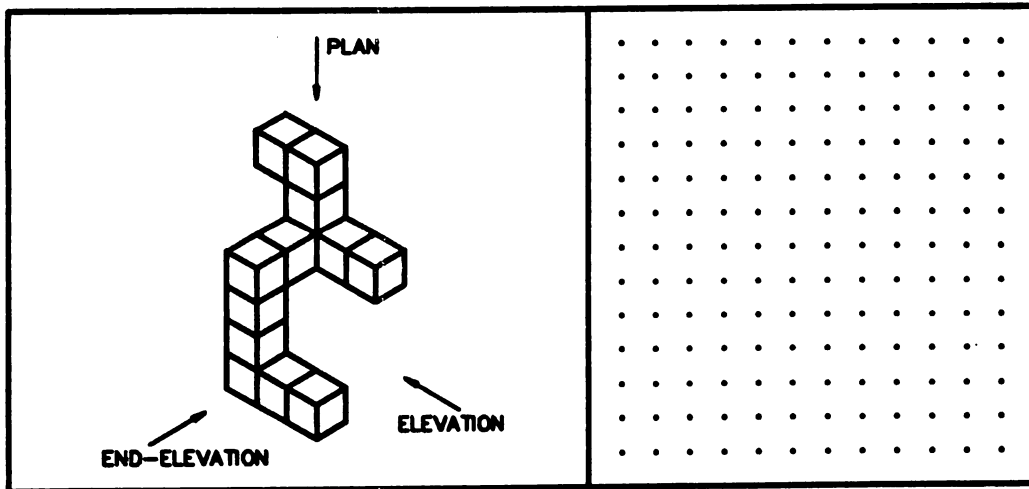
3. Two perpendicular lines are shown. Show on diagrams (a) and (b) below the effect of each of the following CAD commands.

(a) Fillet.

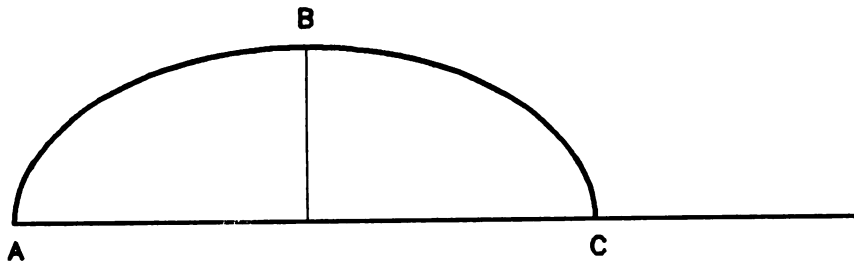
(b) Chamfer.



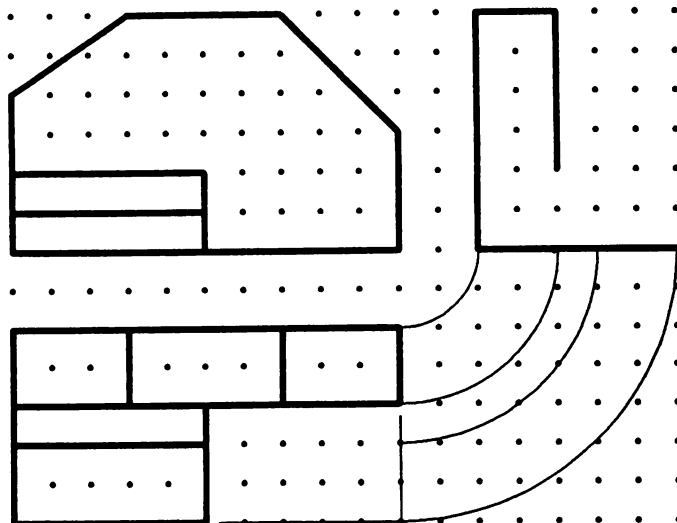
4. Using the square grid, sketch the orthographic views indicated by the arrows.



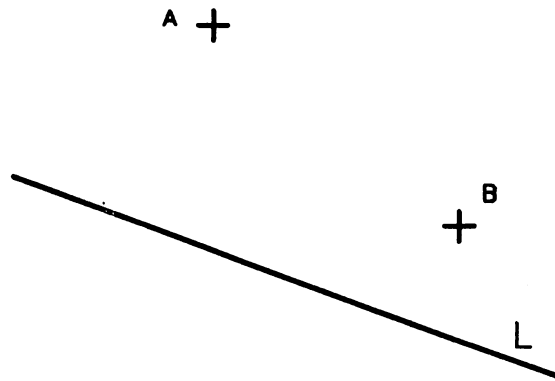
5. Construct a tangent to the semi-ellipse ACB which shall be inclined at 30° to the major axis AC. Clearly show how the point of contact is obtained.



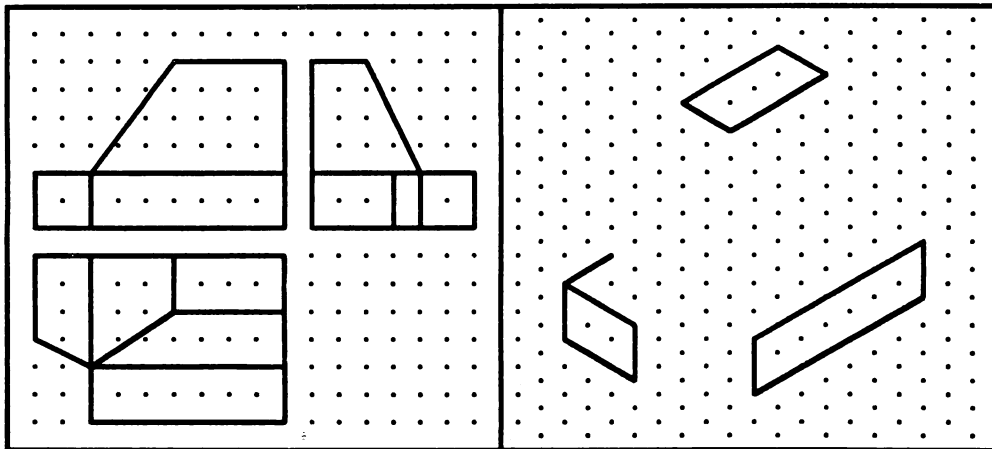
6. Complete the end view.



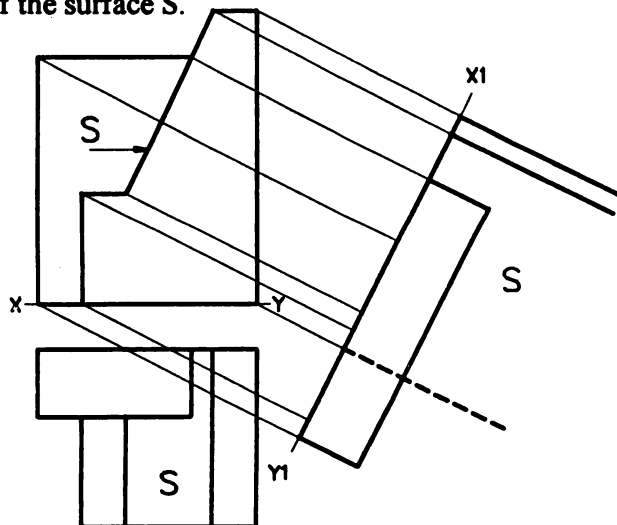
7. A and B represent two houses which require connection to a water main represented by the line L. Determine the location of a common connection point on the main supply line which will give the shortest length of pipe required.



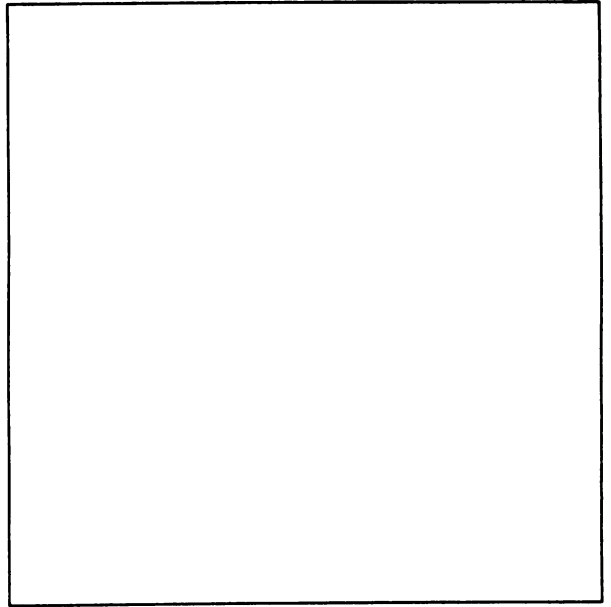
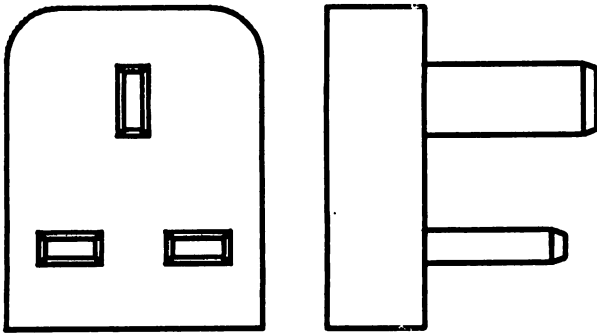
8. Shown on the square grid are three orthographic views of an object. The incomplete pictorial sketch of the object is shown on the isometric grid. Complete this sketch.



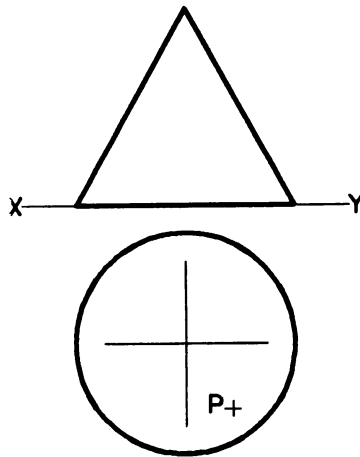
9. Shown is the elevation and plan of a solid. Complete the auxiliary plan of the solid on the given $X_1—Y_1$ which will show the true shape of the surface S.



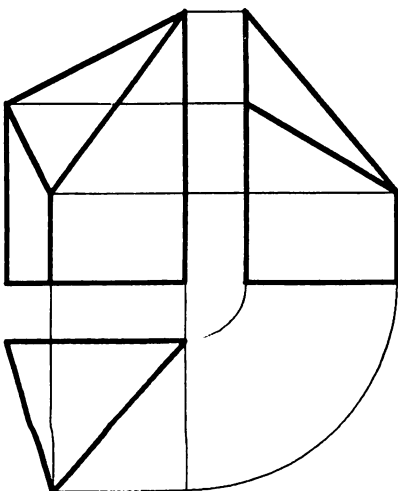
10. Shown is the elevation and end view of a plugtop.
- (a) Make a freehand pictorial sketch of the plugtop in the space provided.
- (b) Apply appropriate shading.



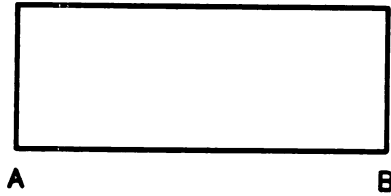
11. Shown is the elevation and plan of a cone. Also shown in plan is the position of a point P on the surface. Locate P in the elevation.



12. Shown are the orthographic views of a container. The container is open at the top. Draw the surface development of the container.



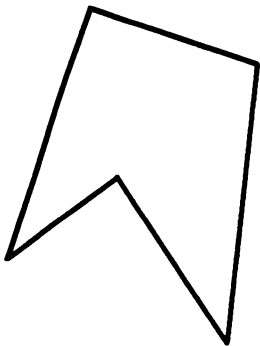
13. A triangle ABC is to be drawn equal in area to the rectangle shown. Given that the angle ACB is to be 60° , determine a position for the vertex C and draw the triangle.



14. Transformations are applied to the figure in the following order:-

- (i) central symmetry in P.
- (ii) central symmetry in Q.

Draw the resulting image.



P
+

Q
+

15. A pictorial view of a roof is shown. Also shown, is the elevation, end view and incomplete plan. Complete the plan.

