

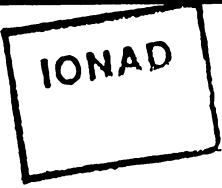
A

JUNIOR CERTIFICATE EXAMINATION, 1994

TECHNICAL GRAPHICS - HIGHER LEVEL

THURSDAY 16 JUNE - AFTERNOON, 2.00 - 5.00

TOTAL MARKS 400 (Sections A and B)

EXAMINATION NUMBER		
CENTRE STAMP		

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 Answerbook (Section A) at the end of the examination.

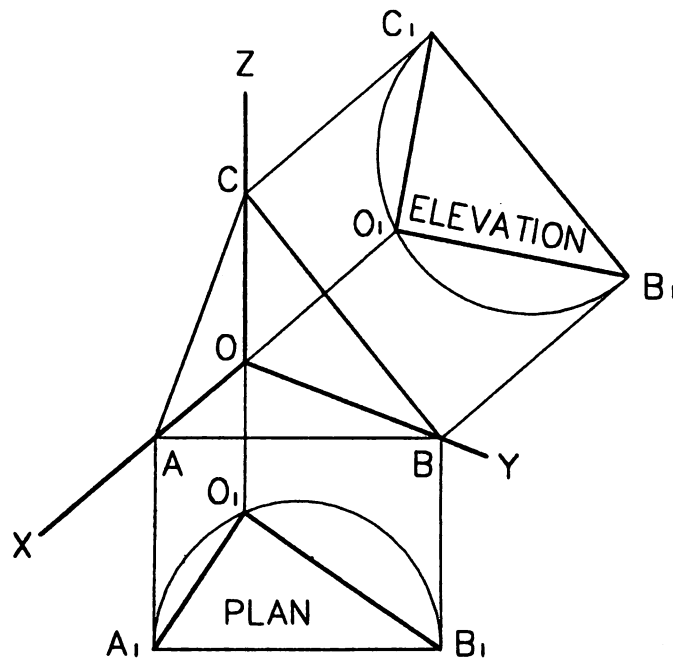
For Examiner's use only	
QUESTION	MARK
Section A (Total)	
Section B Q1	
Q2	
Q3	
Q4	
Q5	
Q6	
TOTAL 	
GRADE 	

WARNING

**THIS ANSWERBOOK MUST BE HANDED UP
AT THE END OF THE EXAMINATION.**

SECTION A (ANSWER ANY TWELVE QUESTIONS - ALL QUESTIONS CARRY EQUAL MARKS)

1. Shown is the projection plane ABC for an axonometric projection and the projections of the coordinate axes X, Y, Z. The true size and shape of two of the orthographic views are indexed $O_1B_1C_1$ and $O_1B_1A_1$. Using a similar construction to that shown draw the third orthographic view.



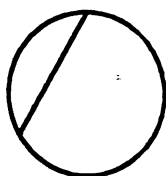
2. Using a CAD facility, a circle and a line were drawn as shown in stage 1 below. Stages 2—5 which follow were executed using editing commands. List these commands in the spaces provided.

Stage 2: _____

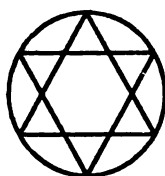
Stage 3: _____

Stage 4: _____

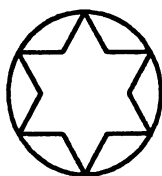
Stage 5: _____



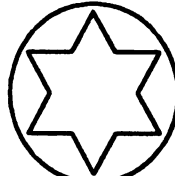
STAGE 1



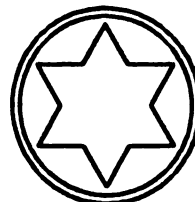
STAGE 2



STAGE 3

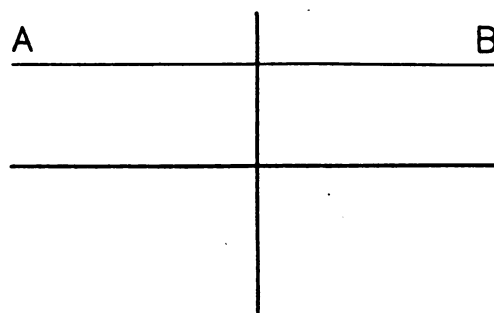


STAGE 4



STAGE 5

3. The figure shows the major and minor axis of an ellipse and a line AB. Without having to draw the ellipse locate a point on the curve which will lie on the given line AB.

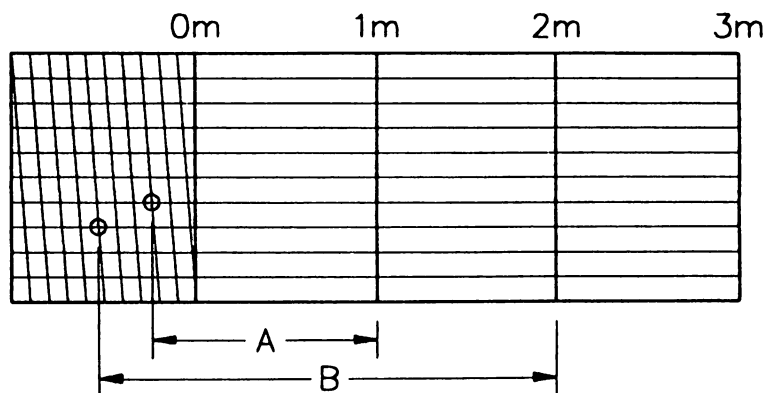


4. (a) Fill in the blanks below:

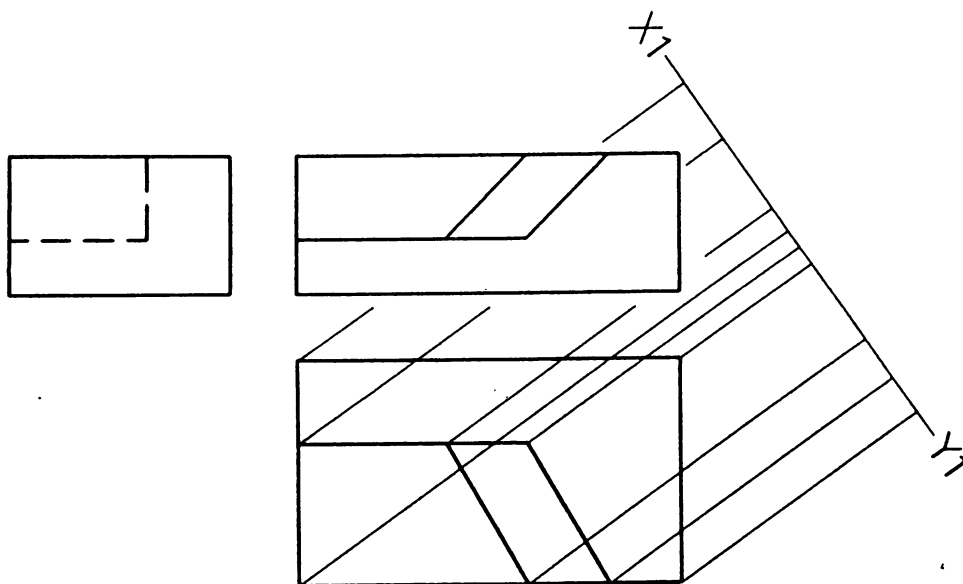
(i) Distance a is _____ metres.

(ii) Distance b is _____ metres.

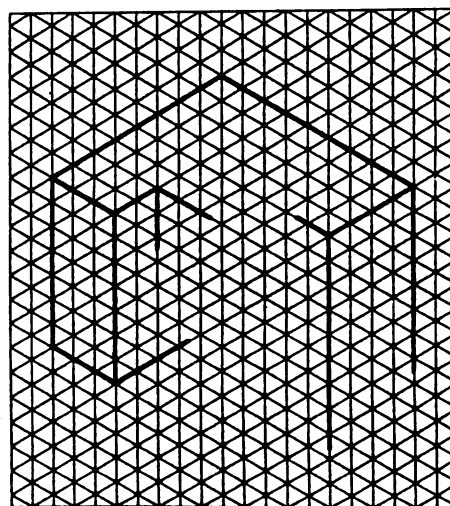
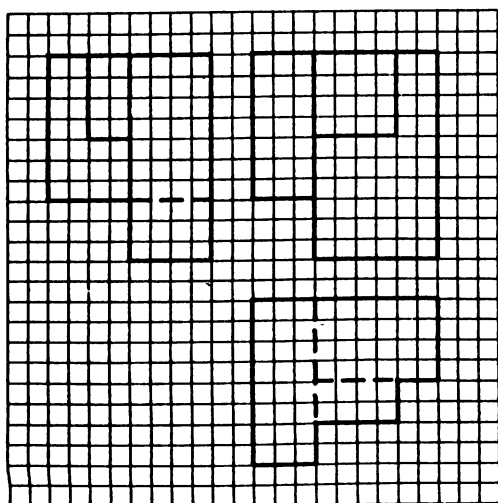
(iii) The diagonal scale shown reads up to _____ metres.



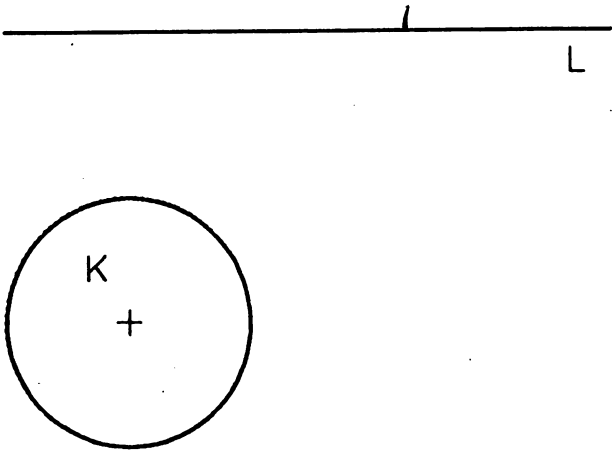
5. Project an auxiliary elevation of the solid of the given X_1-Y_1 line.



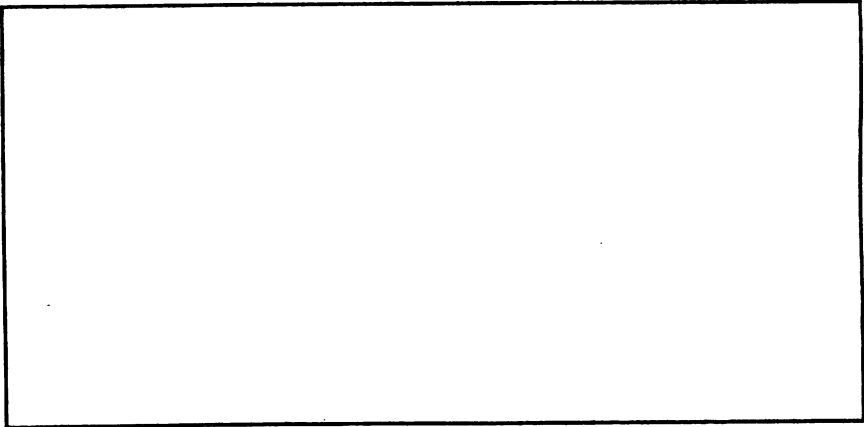
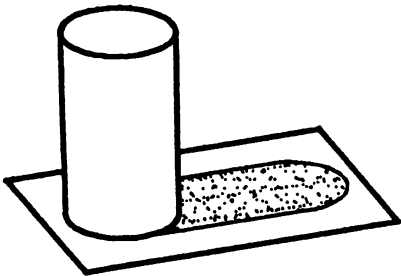
6. Shown on the square grid are three orthographic views of an object. The incomplete pictorial sketch of the object is shown on the isometric grid. Complete this sketch.



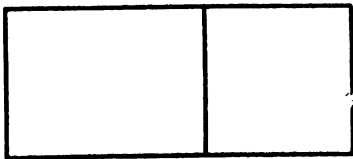
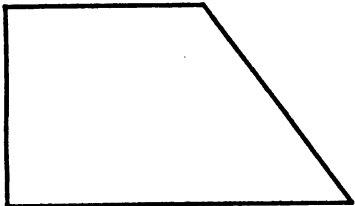
7. Describe a circle of radius 22 to touch the given line L and circle K. Show clearly the necessary construction and points of contact.



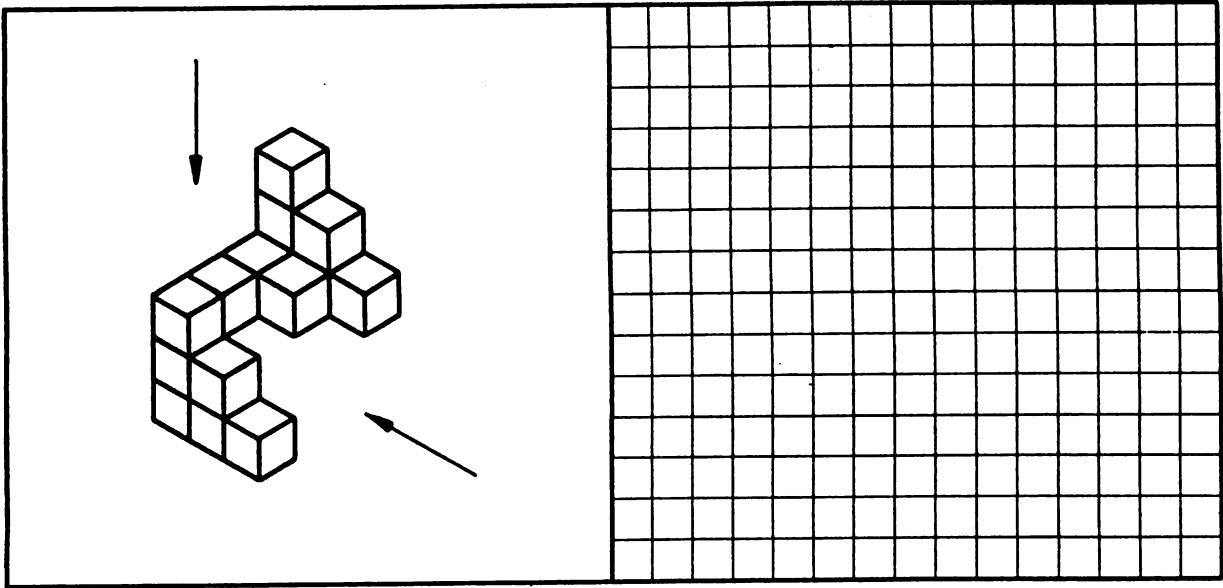
8. Make a freehand drawing of the figure in the box provided and apply shading to the cylinder given that the cast shadow is as illustrated.



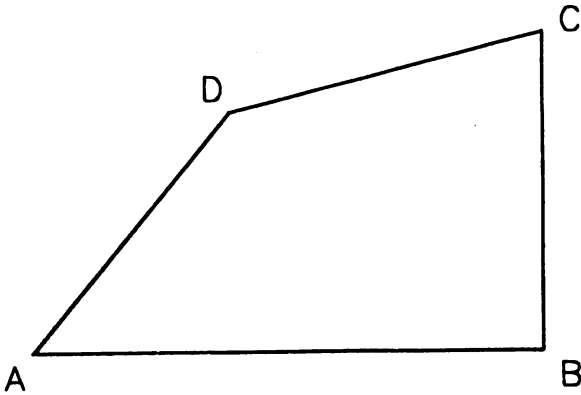
9. Shown is the plan and elevation of a solid. Draw separately the surface development of this solid.



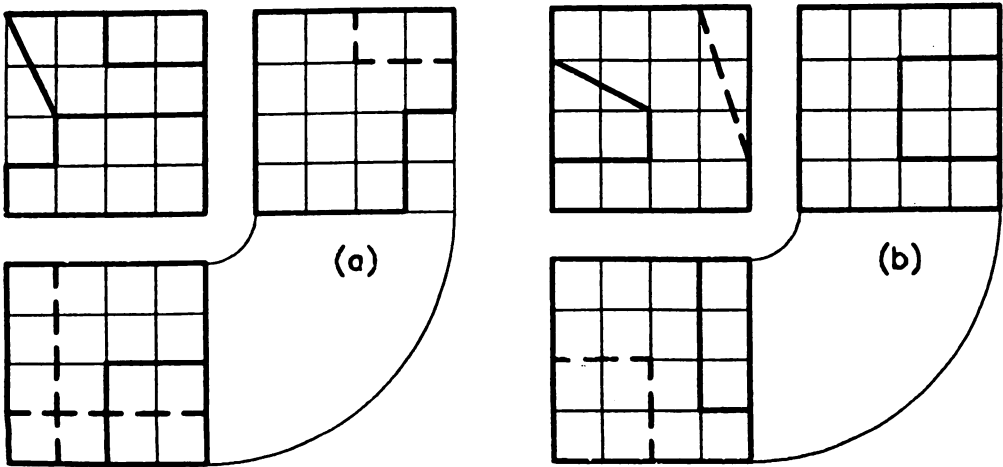
10. Using the square grid sketch the orthographic views indicated by the arrows.



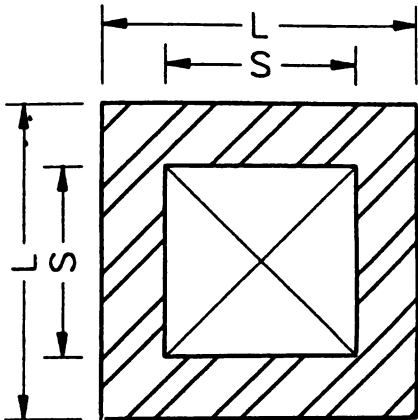
11. Draw a line from C which will bisect the area of the quadrilateral ABCD.



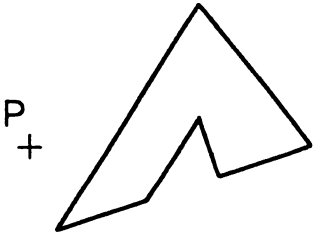
12. Complete the end-views at (a) and (b).



13. Draw a square equal in area to the shaded portion of the figure shown.



14. Draw the image of the figure under central symmetry in point P using a scale factor of 2.



15. The end-elevation and plan of an object is shown. Project the front elevation.

