



**A**



**JUNIOR CERTIFICATE EXAMINATION, 1999**  
**TECHNICAL GRAPHICS — ORDINARY LEVEL**  
**THURSDAY 17 JUNE — MORNING, 9.30 — 12.00**  
**TOTAL MARKS 400 (Section A and B)**

<b>EXAMINATION NUMBER</b> 	
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<b>CENTRE STAMP</b> 	
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**INSTRUCTIONS**

- (a) Answer **any ten** 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.

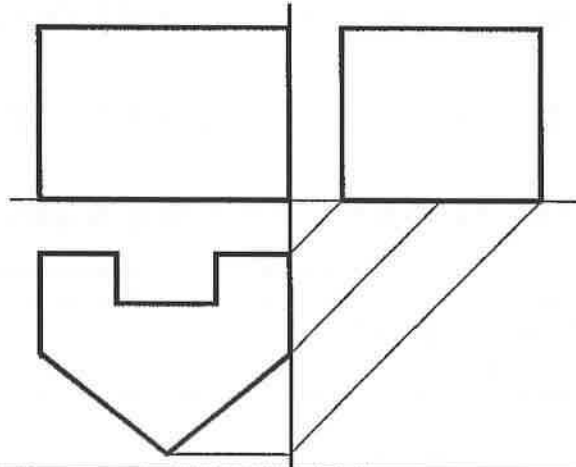
<b>For Examiner's use only</b>	
<b>QUESTION</b>	<b>MARK</b>
<b>Section A (Total)</b>	
<b>Section B Q1</b>	
<b>Q2</b>	
<b>Q3</b>	
<b>Q4</b>	
<b>Q5</b>	
<b>Q6</b>	
<b>TOTAL</b> 	
<b>GRADE</b> 	

**WARNING**

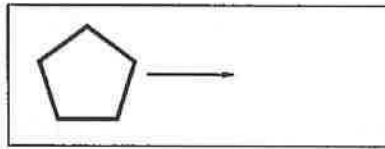
**THIS ANSWERBOOK MUST BE HANDED UP  
 AT THE END OF THE EXAMINATION  
 OTHERWISE MARKS WILL BE LOST.**

**SECTION A ANSWER ANY TEN QUESTIONS - ALL QUESTIONS CARRY EQUAL MARKS.**

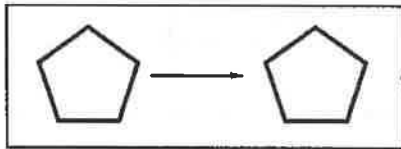
**1** Draw the missing lines in the elevation and in the end elevation.



**2** In each of the examples below, name ONE CAD command which will result in the original drawing changing to Step 1 and Step 2.



Original Drawing



Step 1



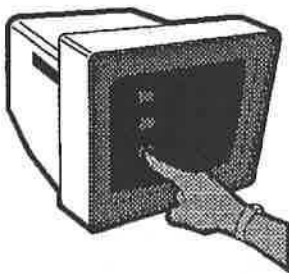
Step 2

Step 1 = \_\_\_\_\_

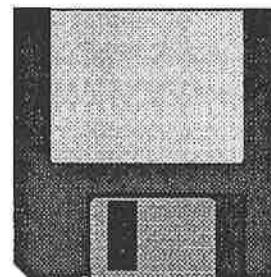
Step 2 = \_\_\_\_\_

**3** Identify the components at (a) and (b), below.

(a)



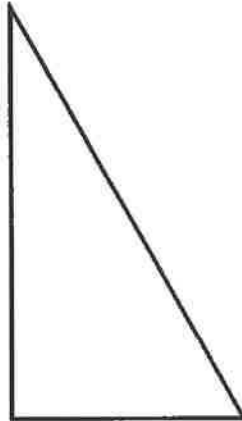
(b)



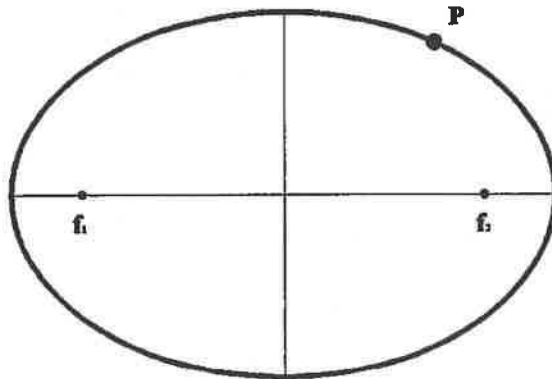
(a) \_\_\_\_\_

(b) \_\_\_\_\_

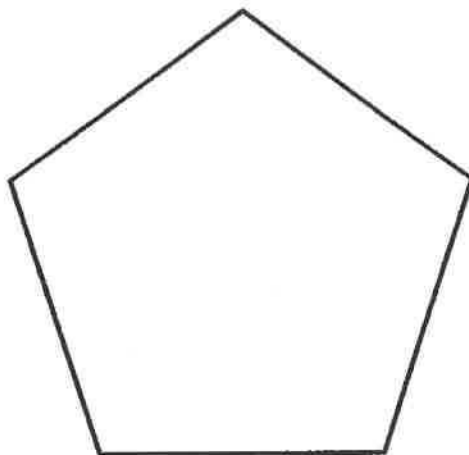
**4** Convert the area of the given TRIANGLE to a RECTANGLE, twice the area of the given triangle.



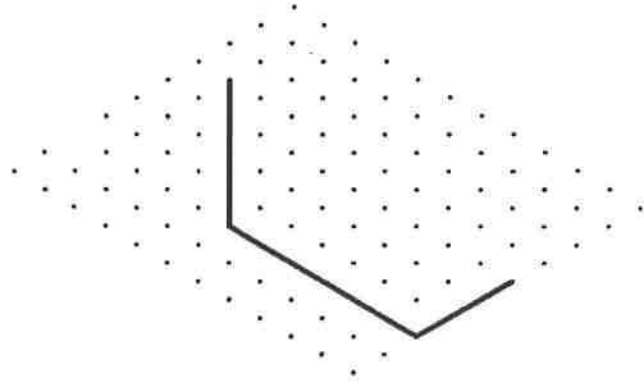
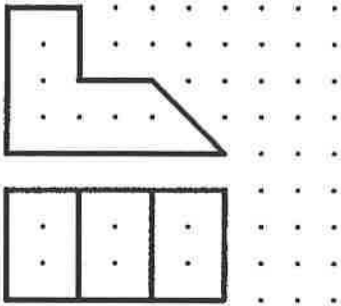
**5** Construct a Tangent to the Ellipse at the point P. Show all construction lines.



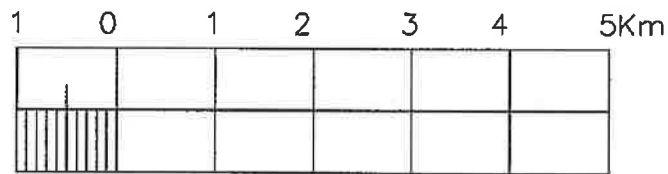
**6** Inscribe a CIRCLE in the given PENTAGON, in contact with each side.



7 Shown is the elevation and plan of a solid. Complete the isometric view of the solid.



8 Using the scale provided, measure the lines AB and CD and state their lengths.



A ————— B

C ————— D

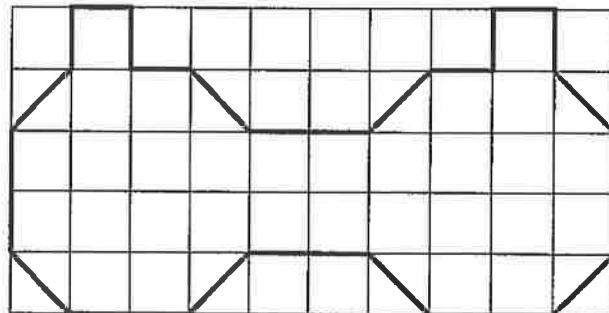
AB = \_\_\_\_\_

CD = \_\_\_\_\_

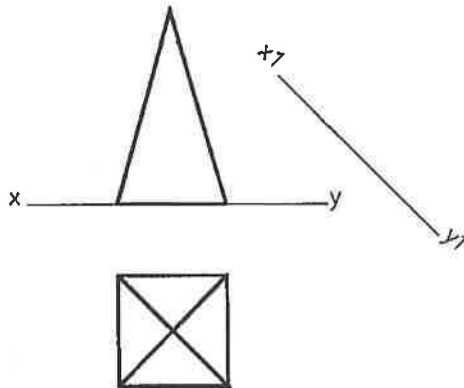
9 Determine approximately the area of the irregular figure in square units.

1 square = 1 x 1 Unit.

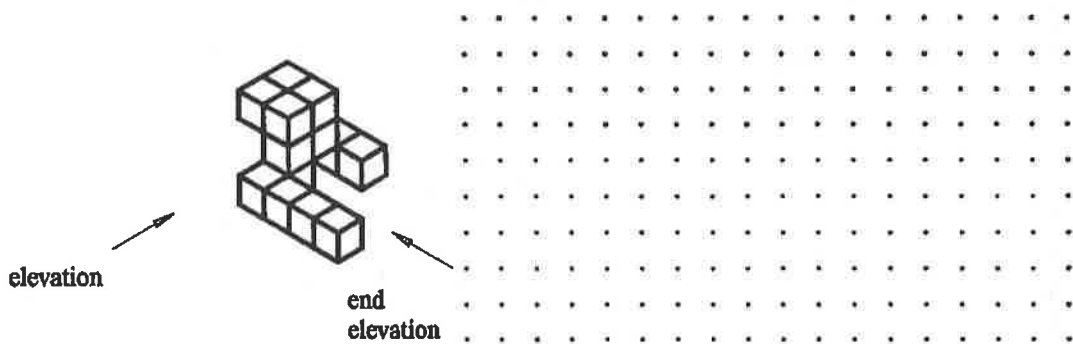
Ans :- \_\_\_\_\_



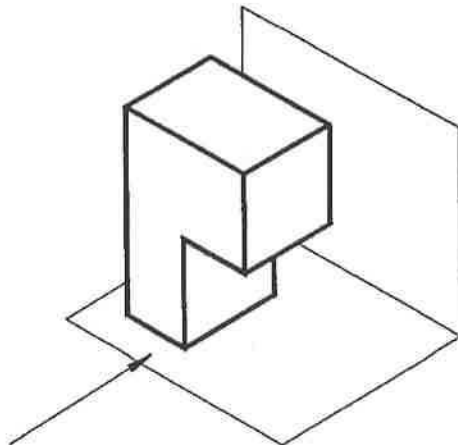
- 10** Shown is the elevation and plan of a square based pyramid.  
Project the AUXILIARY ELEVATION, on the given X1 - Y1 line.



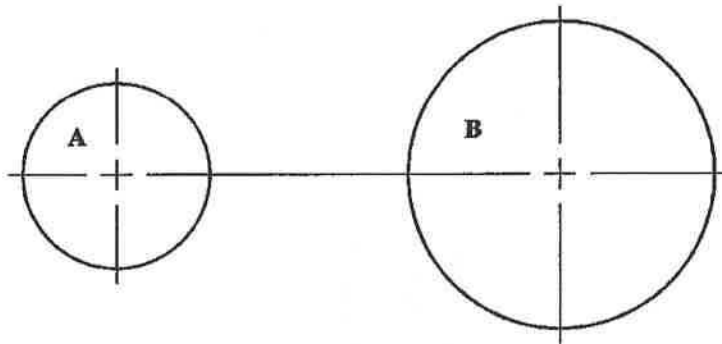
- 11** Using the grid provided, sketch the orthographic views indicated by the arrows.



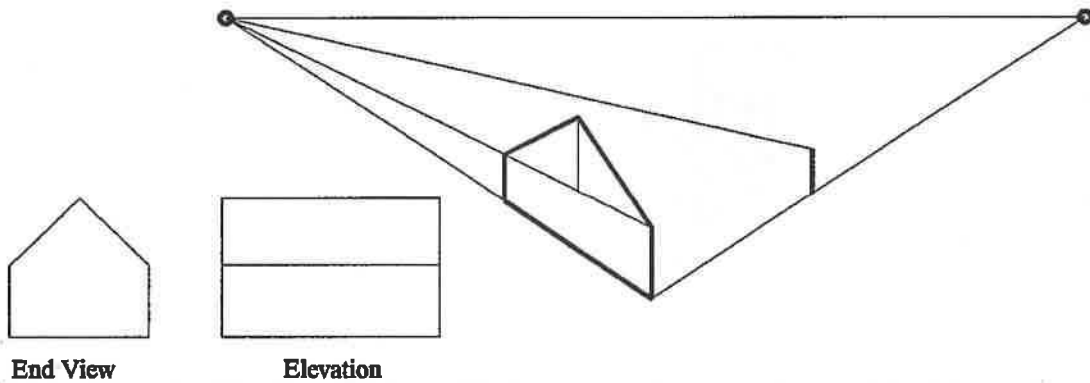
- 12** Sketch the SHADOW cast by the SOLID when the light source is as shown by the arrow.



- 13** Construct an **EXTERNAL TANGENT** to circles A and B, showing clearly all constructions and points of contact.



- 14** The figure shows the incomplete **TWO POINT** perspective outline of a house. Complete the perspective outline.



- 15** Rotate the given figure, clockwise, about point O, through  $90^\circ$ .

