



**A** JUNIOR CERTIFICATE EXAMINATION, 2003  
 TECHNICAL GRAPHICS — HIGHER LEVEL  
 THURSDAY 12 JUNE — MORNING, 9:30 - 12:30  
 TOTAL MARKS 400 (Sections A and B)

Examination Number  	Centre Stamp  
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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.

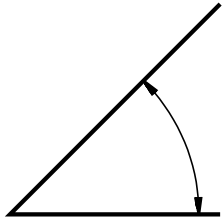
For Examiner's Use Only	
QUESTION	MARK
Section A (Total)	
Section B Q1	
Q2	
Q3	
Q4	
Q5	
Q6	
<b>TOTAL</b>	☐☐☐➔
<b>GRADE</b>	☐☐☐➔

**WARNING**

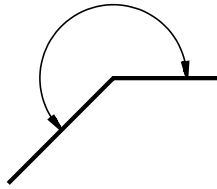
**THIS ANSWERBOOK MUST BE HANDED UP  
 AT THE END OF THE EXAMINATION  
 OTHERWISE MARKS WILL BE LOST.**

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

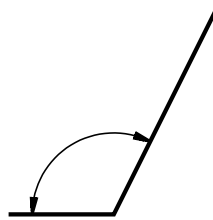
TABLE			
Acute angle	Complementary angle	Obtuse angle	Reflex angle



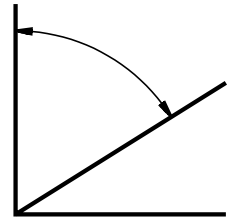
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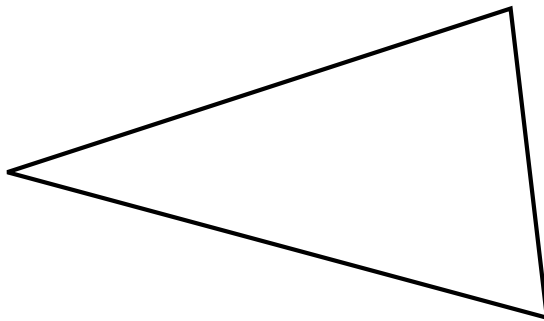


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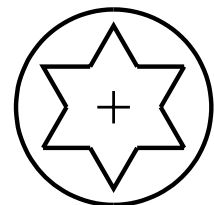
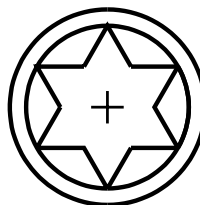
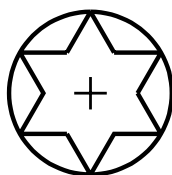
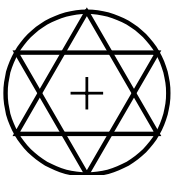


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2. Describe a circle about the triangle shown.



3. List the CAD commands used to edit the figure as shown in the sequence below.



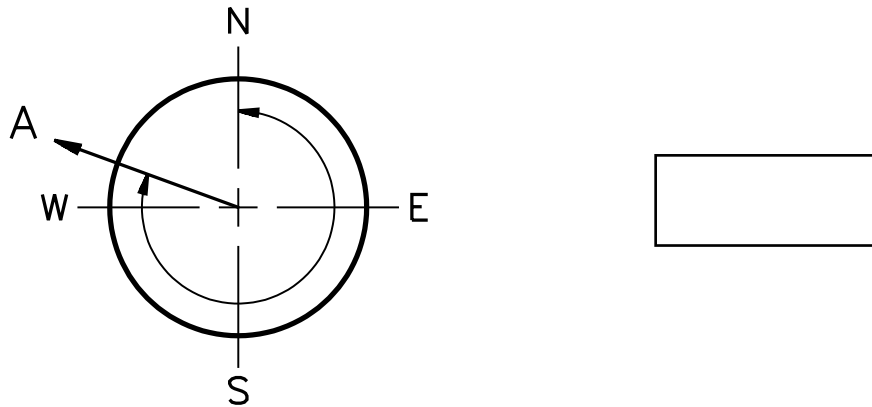
Commands used:

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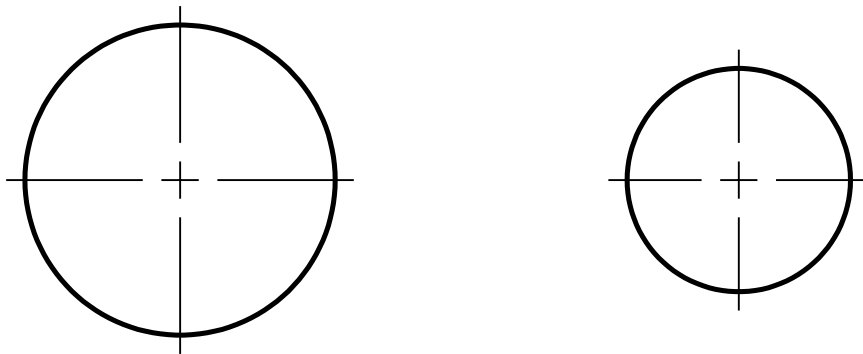
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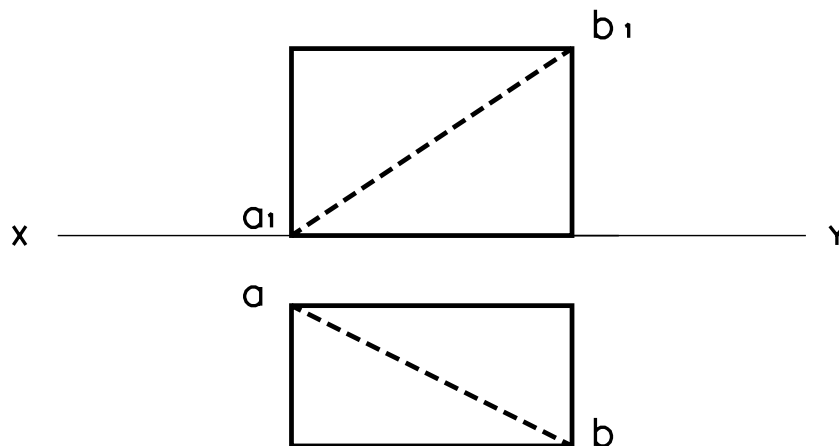
4. The figure shows a compass. Use a protractor to determine the bearing of the direction A with reference to North as shown. Write your answer in the box provided.



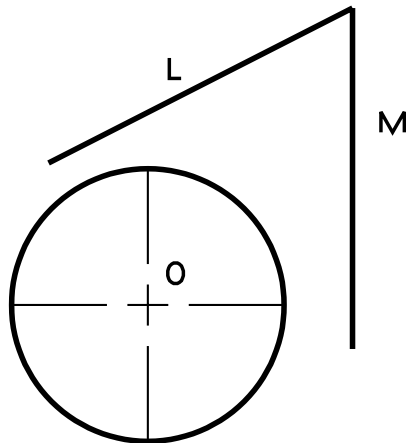
5. Construct an internal tangent to the two circles shown. Show clearly how both points of contact are determined.



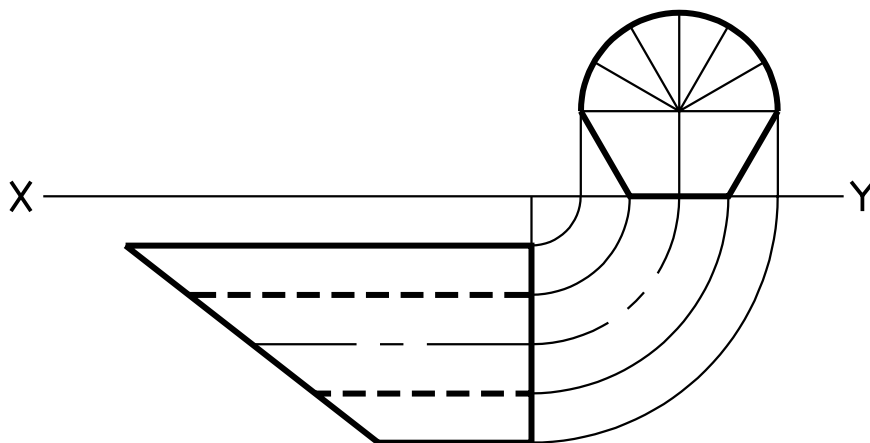
6. Shown are the elevation and plan of a prism. Determine the true length of the diagonal AB.



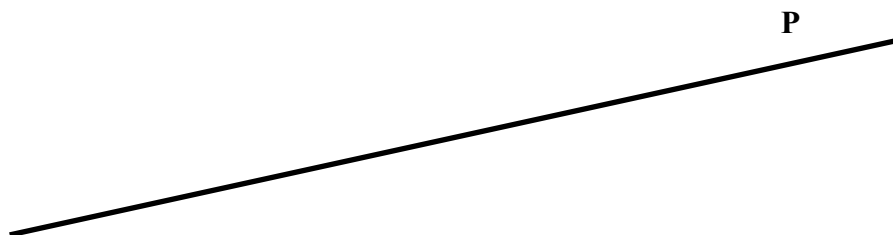
7. Shown is a circle with centre O and the lines L and M. Locate a point P which is 10mm from the circumference of the circle and equidistant from both lines.



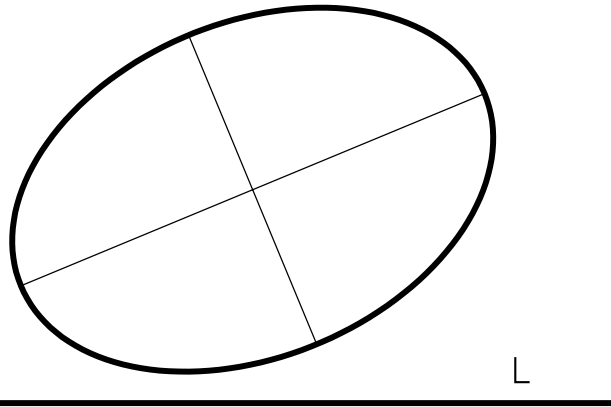
8. The plan and end view of a cut solid are shown. Project the elevation on the given X-Y line.



9. The line P represents the perimeter of a triangle whose sides are in the ratio 3:4:5. Divide the perimeter in the required ratio and construct the triangle.

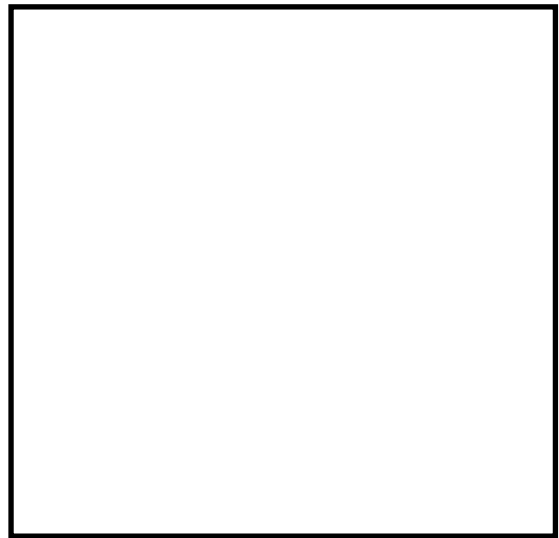
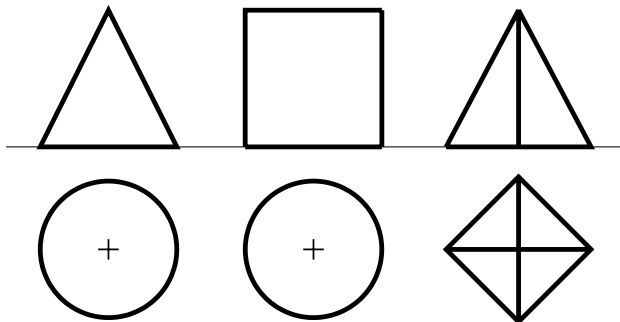


10. Draw a tangent to the ellipse which makes an angle of  $45^\circ$  to the line L. Show clearly how to determine the point of contact for the tangent.

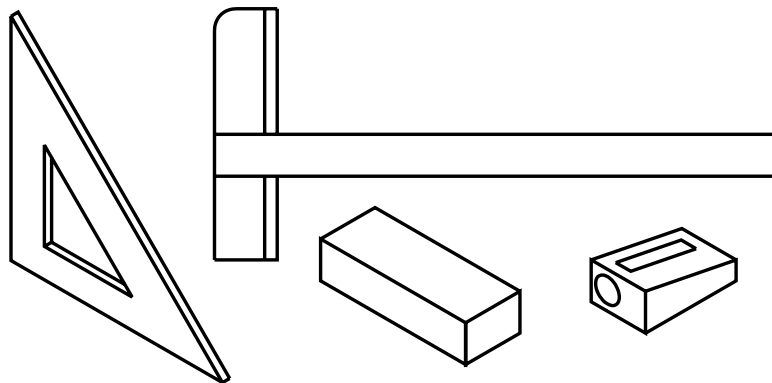


11. Shown is the elevation and plan of a cone, a cylinder and a pyramid.

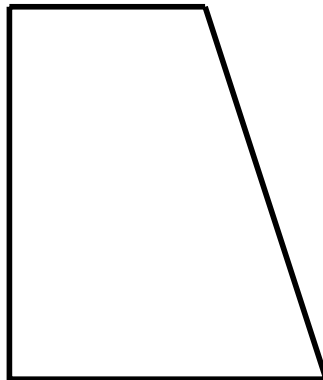
Make a freehand pictorial sketch of the solids in the space provided.



12. Apply shading and texture to enhance the sketch of the Technical Graphics equipment shown.



13. Convert the given quadrilateral into a square of equal area.



14. A pedestrian crossing is to be provided in order to facilitate students walking between the school and a library at the other side of the road, as shown in the figure. Determine the position for the crossing which will result in the shortest possible journey.

+ SCHOOL



+ LIBRARY

15. Write in the measure of the angles A and B in the spaces provided below.

A = \_\_\_\_\_

B = \_\_\_\_\_

