



*Pre-Junior Certificate Examination, 2010*

***Technical Graphics  
Higher Level***

***Section A  
(120 marks)***

***Time : 2½ Hours***

***Instructions***

- (a) Answer **any ten** questions in the spaces provided. All questions carry equal marks.
- (b) Construction lines must be clearly shown.
- (c) All measurements are in millimetres.
- (d) This booklet must be handed up at the end of the examination.
- (e) Write your name, school's name and teacher's name in the boxes below and on all other pages used.

***Name:***

***School:***

***Teacher:***

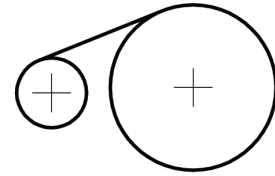
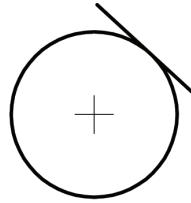
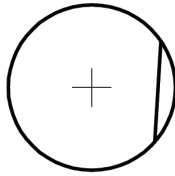
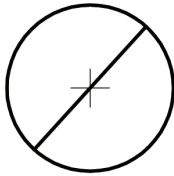

<b>School Stamp</b>

Question	Mark
Section A	
1	
2	
3	
4	
5	
6	
TOTAL	
GRADE	

**SECTION A.** Answer **any ten** questions. All questions carry equal marks.

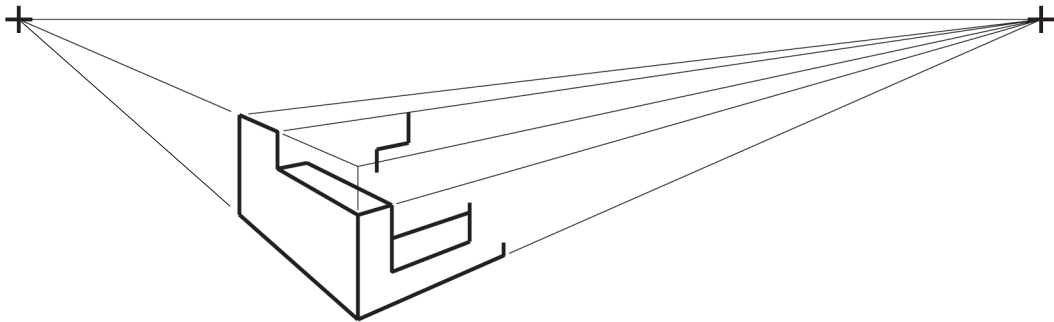
**1** Fill in the label for **each** diagram by selecting from the list on the right.

- Chord
- Tangent
- Diameter
- External Tangent



1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_ 4. \_\_\_\_\_

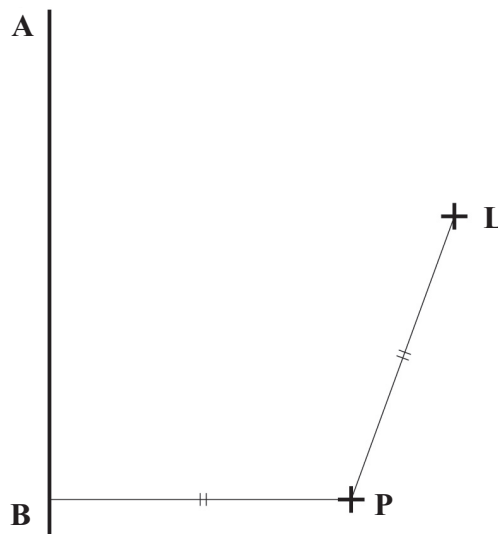
**2** The figure shows the horizon line, vanishing points and incomplete perspective drawing of an armchair. Complete the perspective drawing.



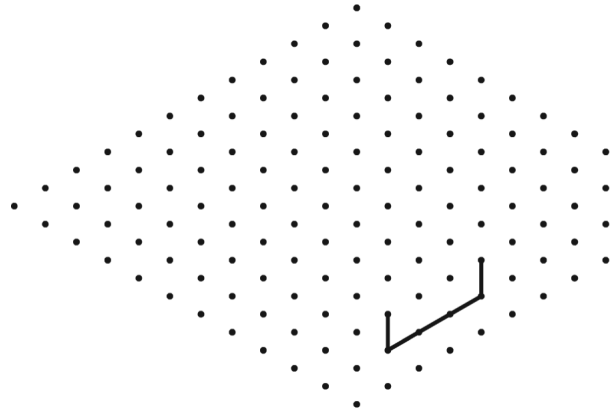
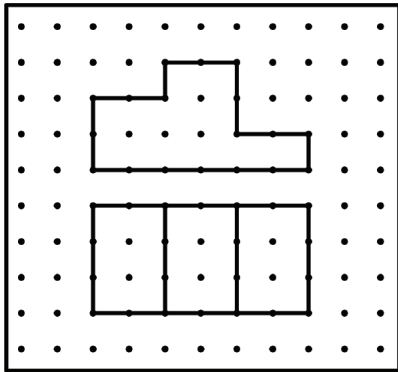
**3** The line **AB** represents a harbour wall at the seafront.

Point **L** shows the location of a lighthouse.

Show the path a boat **P** should take to remain equidistant from the line **AB** and the point **L**.



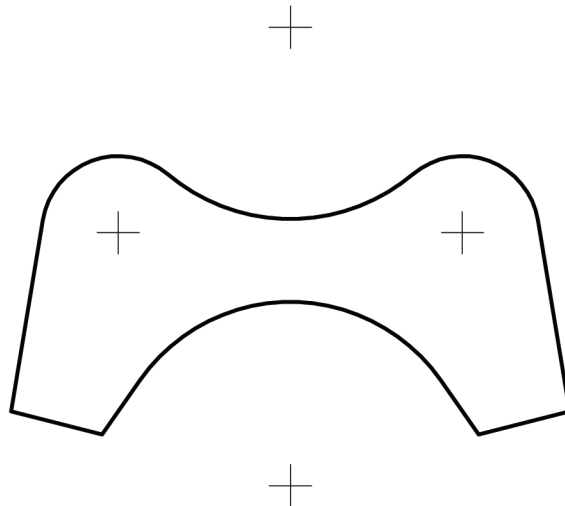
- 4 The elevation and plan of a podium are shown on the square grid. Complete the pictorial sketch of the podium.



- 5 The figure shows the outline of a games console. The centres of the arcs are shown.

The centres of the arcs are shown.

Show clearly all points of contact.



- 6 The X and Y axes shown are marked at intervals of 10 units.

Draw the figure **ABCDE** using the following co-ordinates:

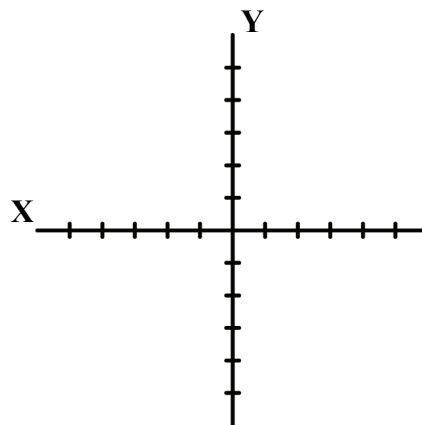
**A (40, 0)**

**B (30, 30)**

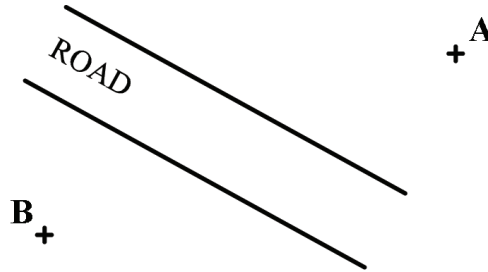
**C (-30, 20)**

**D (-40, -20)**

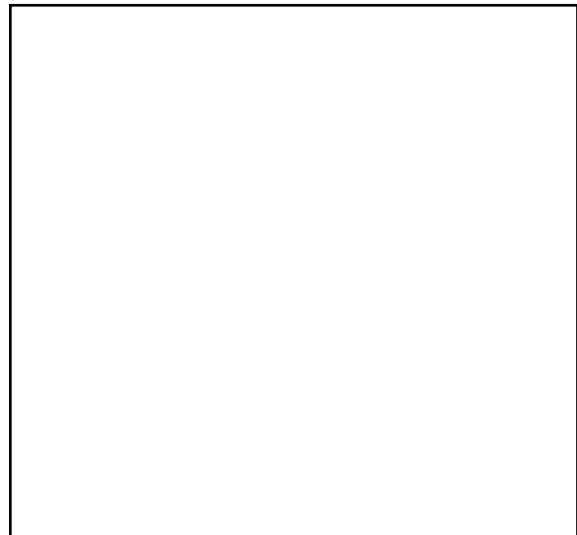
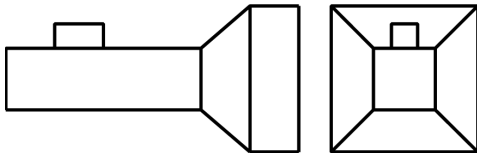
**E (20, -40)**



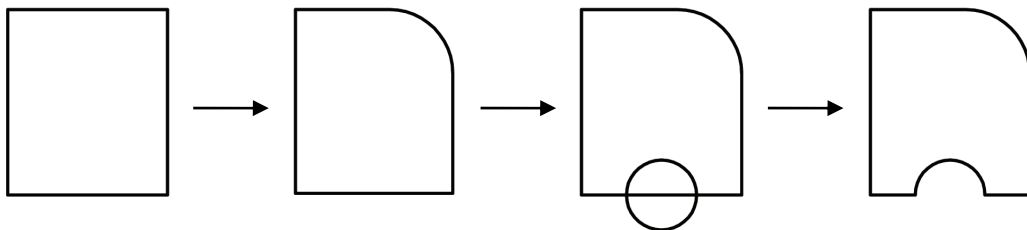
- 7 A pedestrian crossing is to be provided in order to facilitate students walking between a school at point **A** and a local swimming pool at **B**.  
Determine the position of the crossing which will minimise the journey involved.



- 8 The elevation and end view of a torch are shown.  
Draw a **freehand** pictorial sketch of the torch in the space provided.  
Colour **or** shade the sketch.



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

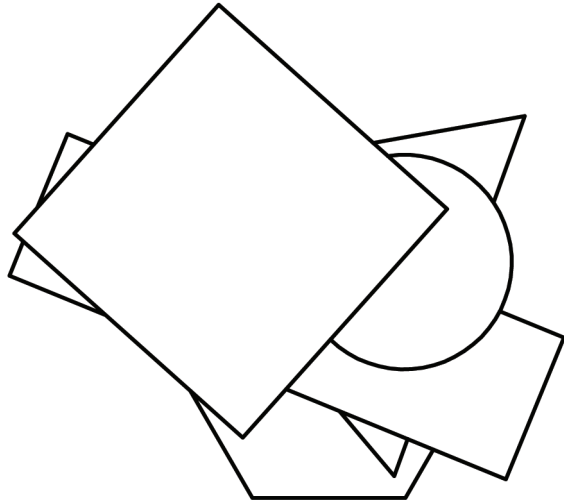


CAD commands: \_\_\_\_\_

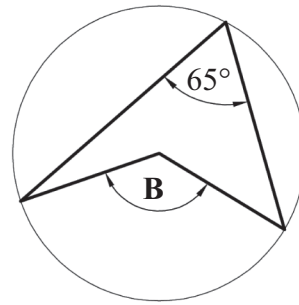
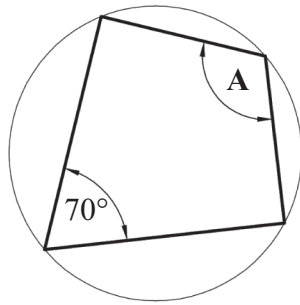
**10** The figure shows a puzzle in which five geometric shapes are stacked one on top of the other.

List the order in which they are stacked from the top down.

1.   Square
2. \_\_\_\_\_
3. \_\_\_\_\_
4. \_\_\_\_\_
5. \_\_\_\_\_



**11** Write down the measure of the angles marked **A** and **B**.



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

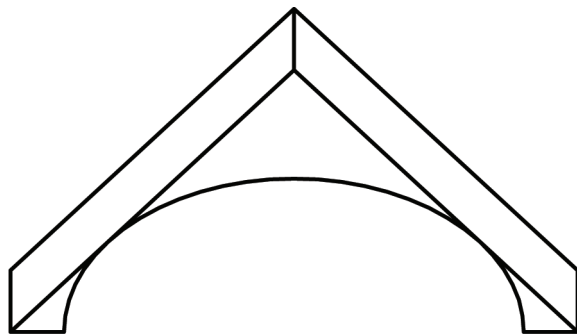
**B** = \_\_\_\_\_

**12** The figure shows the logo for a roofing company.

It is based on an ellipse and two tangents.

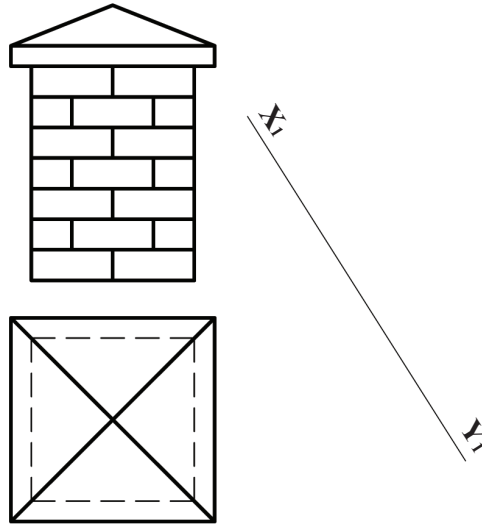
Locate the focal points of the ellipse and determine the points of contact between the tangent and the ellipse.

Show clearly all constructions.

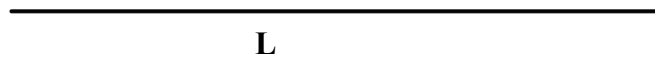


**13** The figure shows the elevation and plan of a brick pillar with a granite cap.

Project an auxiliary elevation of the granite cap on the  $X_1Y_1$  line.

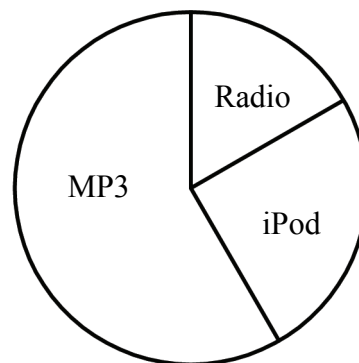


**14** Draw a right-angled isosceles triangle having a perimeter equal to the line  $L$ .



**15** A number of students were surveyed about their favourite personal music device.

The pie chart shows the results in graphical form.



Complete the table to represent this data.

Total	Radio	MP3	iPod
	<b>10</b>		

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