



***Junior Certificate Examination 2006***

***Technical Graphics***  
***Higher Level***  
***Section A (120 marks)***

***Monday 19 June***  
***Morning 9:30 - 12:30***

***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 examination number in the box provided below and on all other pages used.

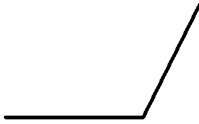
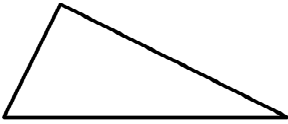
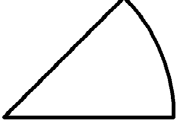
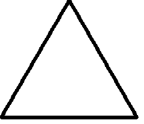
***Examination Number:***

<b>Centre Number</b>

<b>Question</b>	<b>Mark</b>
Section A	
1	
2	
3	
4	
5	
6	
<b>TOTAL</b>	
<b>GRADE</b>	

1. Fill in the label for **each** diagram by selecting from the given table.

Table			
Equilateral	Obtuse	Scalene	Sector

1.  2.  3.  4. 

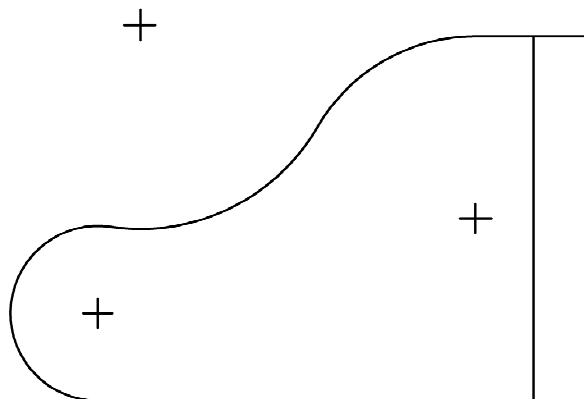
1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_ 4. \_\_\_\_\_

2.

The diagram shows the plan of a grand piano consisting of arcs and lines.

The centres of the arcs are also shown.

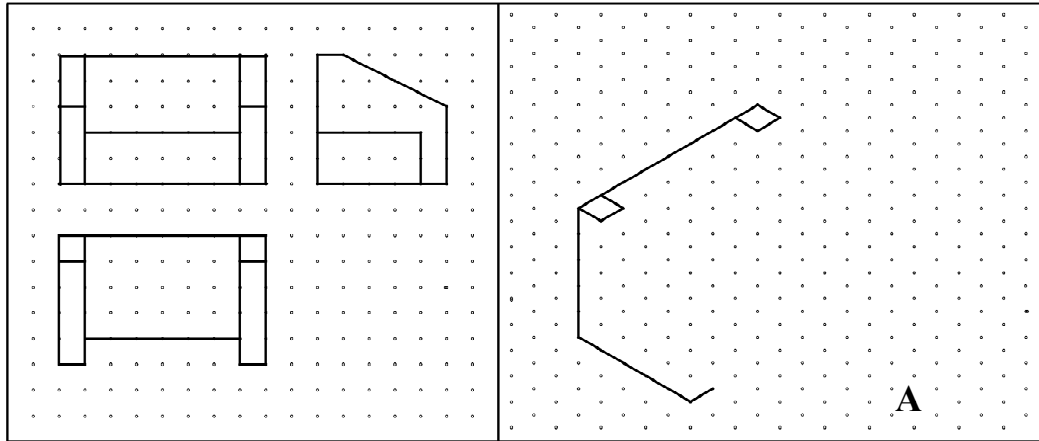
Show **all** the points of contact.



3. **A** and **B** are the locations of two houses which are to be connected to the water main **L**. Find a connection point **P** on line **L** so that the angle  $\text{APB}$  is  $90^\circ$ .



4. The square grid shows the elevation, plan and sectional end view of a sofa. Complete the pictorial sketch A of the sofa.



5. The pictograms shown are from the departure lounge of an airport. What activity does each pictogram suggest ?



\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

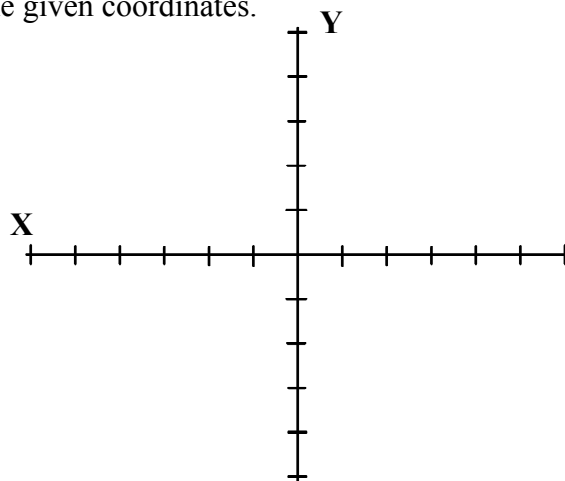
6. The X and Y axes shown are marked at intervals of 10 units. Draw the figure ABCD using the given coordinates.

A (-30,30)

B (40,30)

C (20,-20)

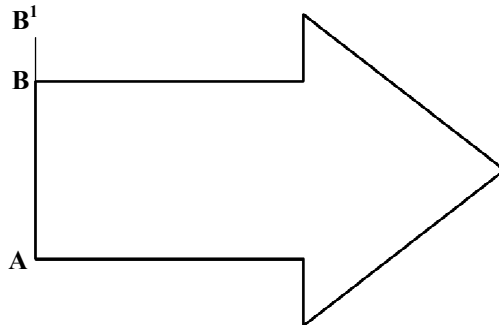
D (-50,-20)



7.

The figure shows a direction arrow.  
Draw a similar arrow with height **AB**  
increased to **AB<sup>1</sup>**.

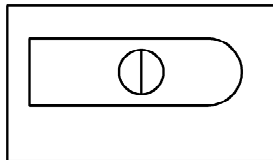
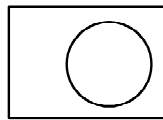
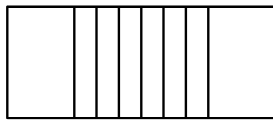
Colour **or** shade your answer.



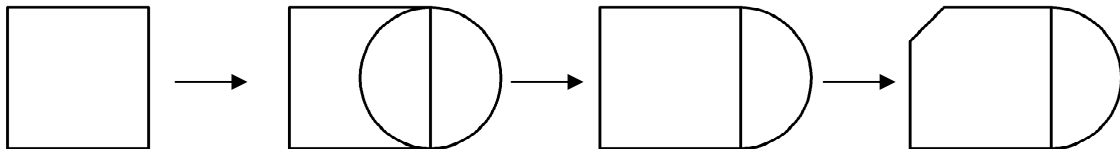
8. The elevation, plan and end view of a pencil sharpener are shown.

Draw a **freehand** pictorial sketch of the sharpener in the space provided.

Colour **or** shade your sketch.



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



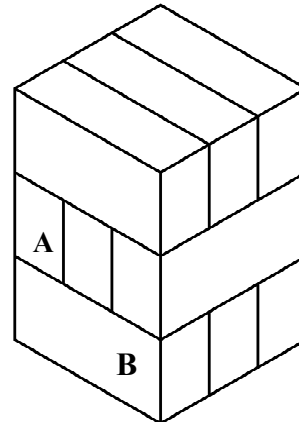
Commands used:

\_\_\_\_\_

- 10.** The figure shows a wooden puzzle consisting of identical blocks.  
State the number of blocks in contact with the blocks marked **A** and **B**.

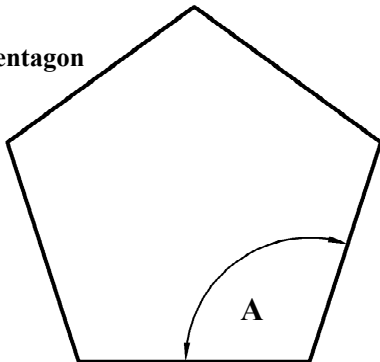
Block **A** is in contact with \_\_\_\_\_ other blocks.

Block **B** is in contact with \_\_\_\_\_ other blocks.

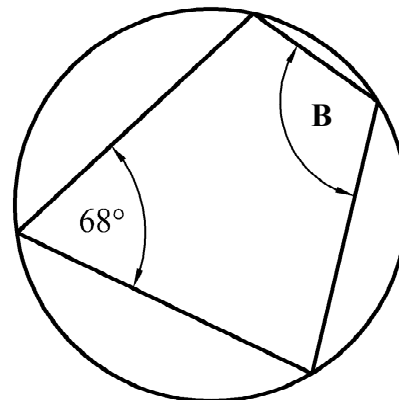


- 11.** State the measure of the angles marked **A** and **B**.

Regular pentagon

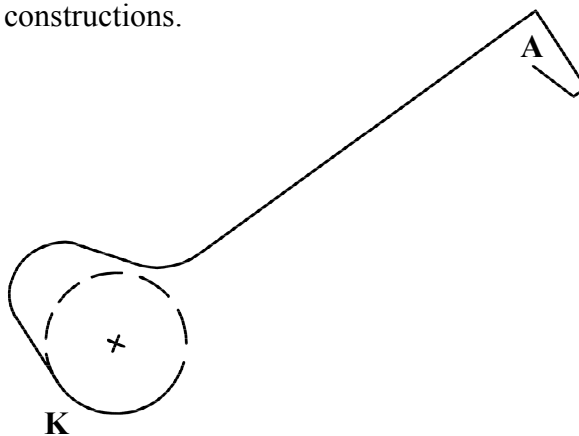


**A** = \_\_\_\_\_



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

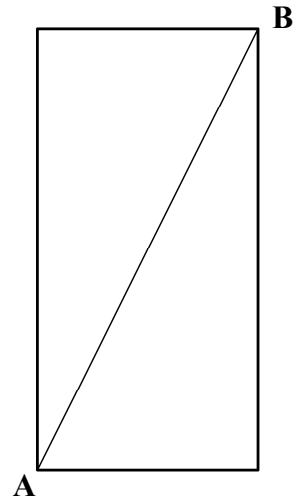
- 12.** The figure shows an incomplete logo for a hurling club.  
Complete the logo by constructing a tangent from point **A** to circle **K**.  
Show all constructions.



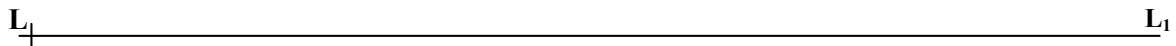
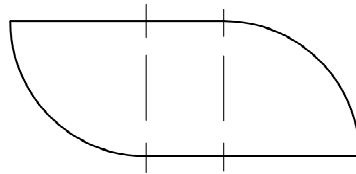
**13.**

The rectangular sheet shown is to be folded flat along its diagonal **AB**.

Draw the sheet in its folded position.



**14.** Starting at point **L**, show the perimeter of the given figure along the line **LL<sub>1</sub>**.



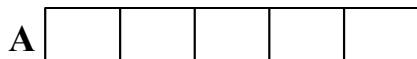
**15.**

The rectangle **B** represents a battery meter on a mobile phone.

The sketch shown at **A** indicates that the phone is fully charged.

Divide the meter shown at **B** to indicate when the phone is 80% charged.

Shade **or** colour the completed diagram.



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*Junior Certificate Examination 2006*

***Technical Graphics***  
***Higher Level***  
***Section B (280 marks)***

***Monday 19 June***  
***Morning 9:30 - 12:30***

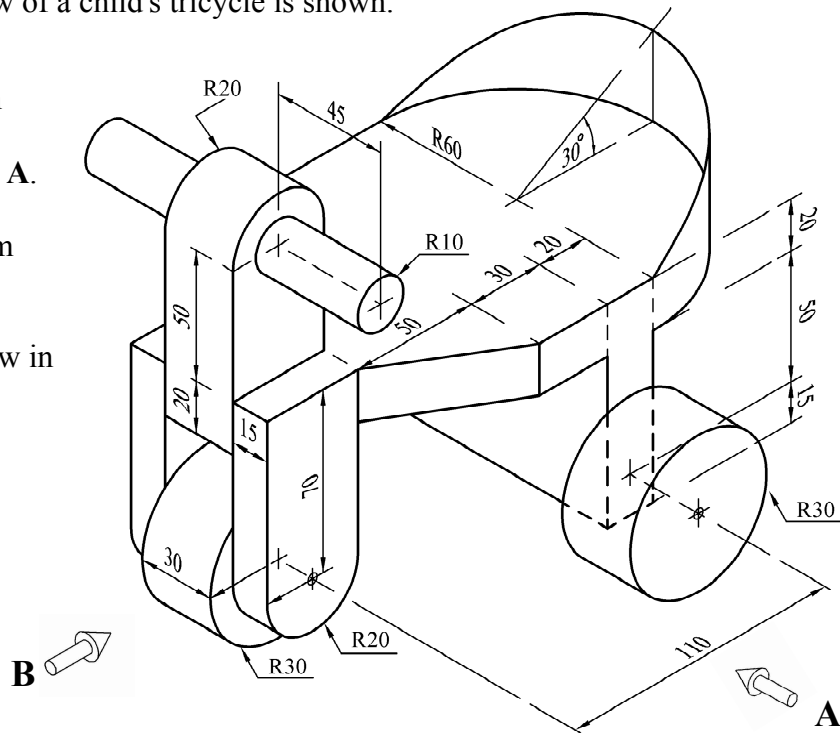
***Instructions***

- (a) Any four questions to be answered.*
- (b) All questions in this section carry equal marks.*
- (c) The number of the question must be distinctly marked by the side of each answer.*
- (d) Work on **one side** of the paper only.*
- (e) Write your examination number on each sheet of paper used.*

**SECTION B** (ANSWER ANY FOUR QUESTIONS - ALL QUESTIONS CARRY EQUAL MARKS)

**1.** A pictorial view of a child's tricycle is shown.

- (a) Draw an elevation looking in the direction of arrow **A**.
- (b) Project a plan from the elevation.
- (c) Project an end view in the direction of arrow **B**.



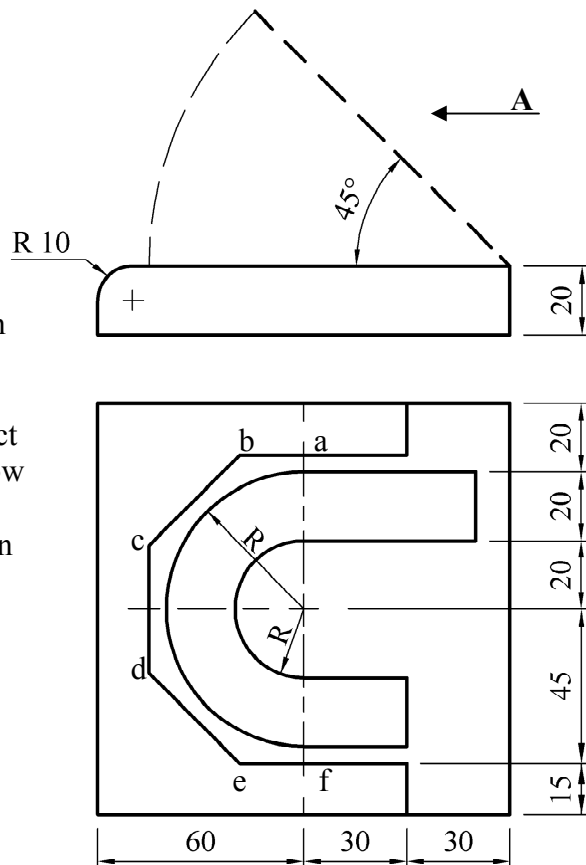
Note: The three wheels are the same size.

**2.**

The elevation and plan of a compact disc player are shown.

The shape abcdef is a semi-octagon.

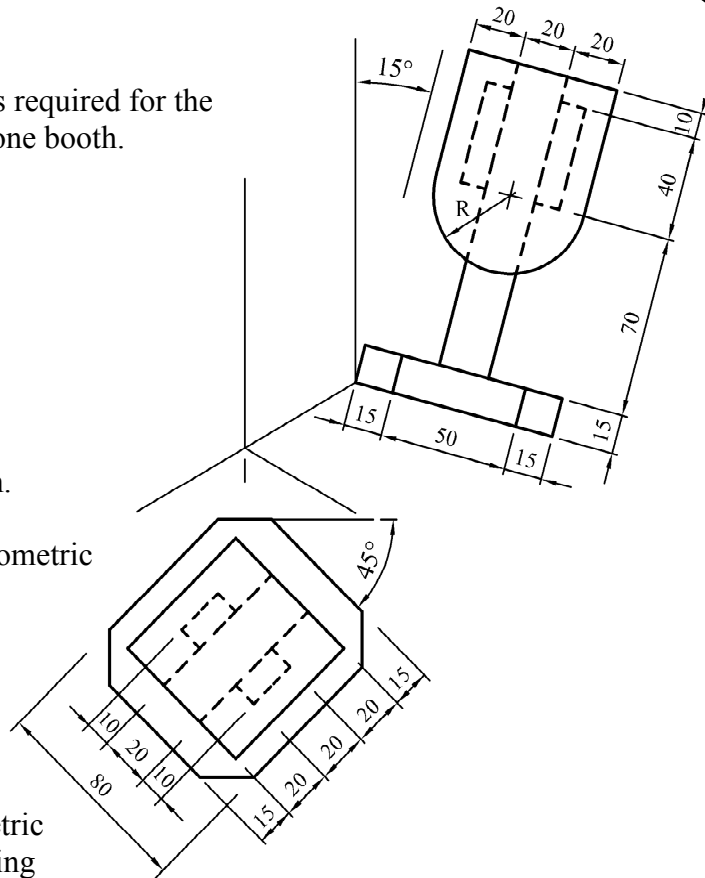
- (a) Draw the given elevation and plan showing all constructions.
- (b) Project an end view of the compact disc player in the direction of arrow **A** to show the cover in the open position as indicated by the broken line in elevation.



**3.**

Shown are the axonometric axes required for the isometric projection of a telephone booth.

- (a)
  - (i) Draw the axonometric axes as shown.
  - (ii) Draw the plan orientated at  $45^\circ$  as shown.
  - (iii) Draw the side elevation orientated at  $15^\circ$  as shown.
  - (iv) Draw the completed axonometric projection of the booth.



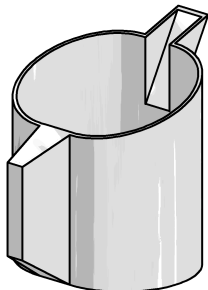
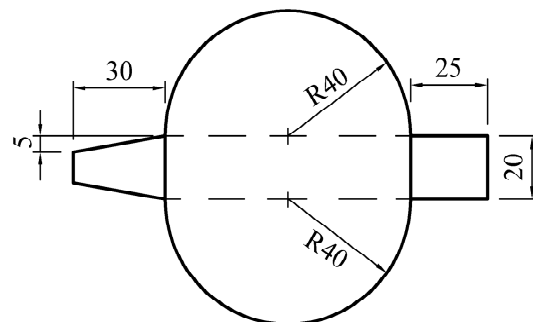
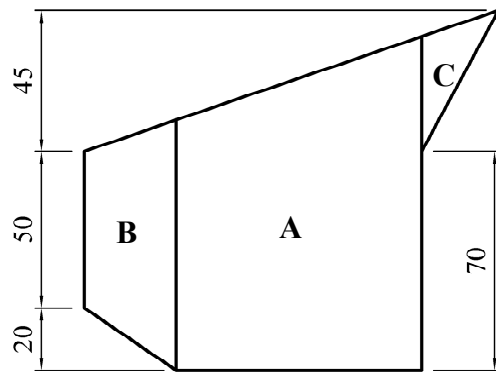
**OR**

- (b) Draw the completed isometric projection of the booth using the isometric scale method.

**4.**

The elevation and plan of a jug are shown. Also shown is a sketch of the jug.

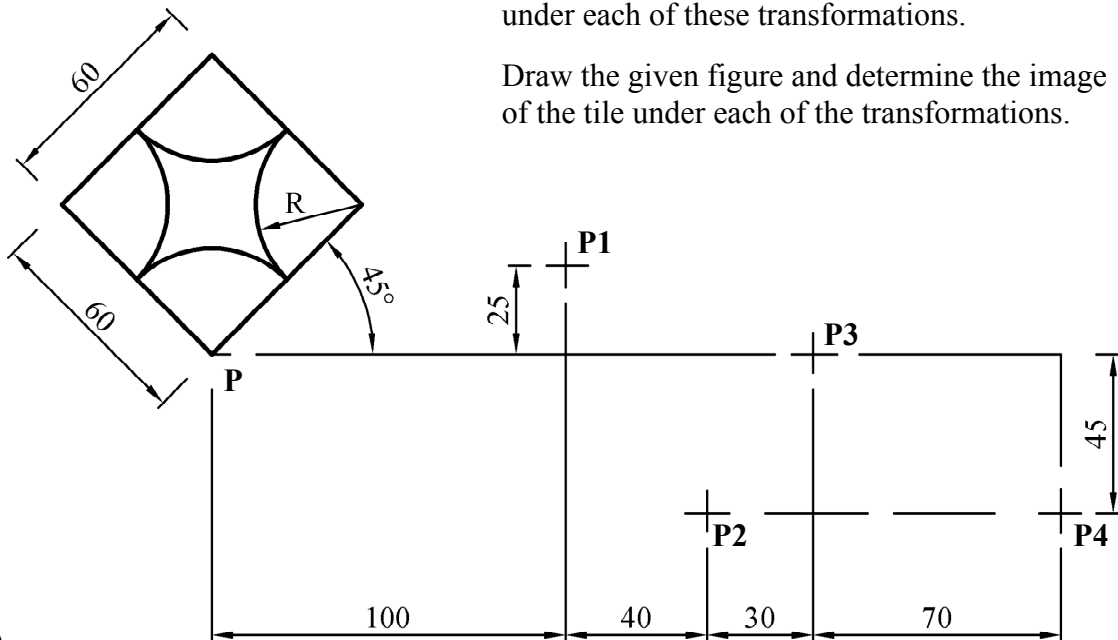
- (a) Draw the given plan and elevation.
- (b) Draw the development of the body A of the jug, excluding handle B and spout C.
- (c) Draw the development of the surface B of the handle.



5. The figure shows a design for a floor tile. The tile is subject to transformations in the following order: (i) Translation (ii) Central symmetry (iii) Axial symmetry (iv) Rotation clockwise through  $90^\circ$ .

**P1, P2, P3 and P4** show the positions of corner **P** under each of these transformations.

Draw the given figure and determine the image of the tile under each of the transformations.



6. The figure shows the design of the base for an electric iron.

The curve **AB** is a parabola with vertex **A**.

The curve **CB** is an identical parabola with vertex **C**.

The curve **DEF** is elliptical.

The curve **DGF** is portion of the same ellipse.

Draw the given design.

Show all constructions clearly.

