



Coimisiún na Scrúduithe Stáit
State Examinations Commission

Junior Certificate Examination, 2015

Technical Graphics
Higher Level

Section A

(120 marks)

Monday, 15 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:

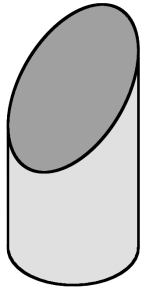
Centre Number

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

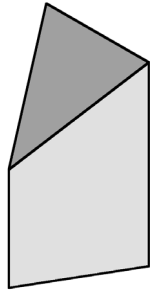
SECTION A. Answer **any ten** questions. All questions carry equal marks.

1. Fill in the label for **each** truncated solid by selecting from the given list.

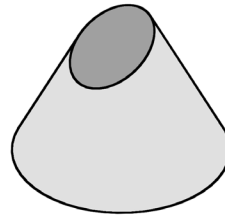
- Triangular Prism
- Cylinder
- Cone
- Pyramid



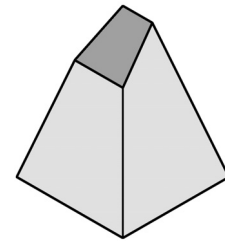
1. _____



2. _____

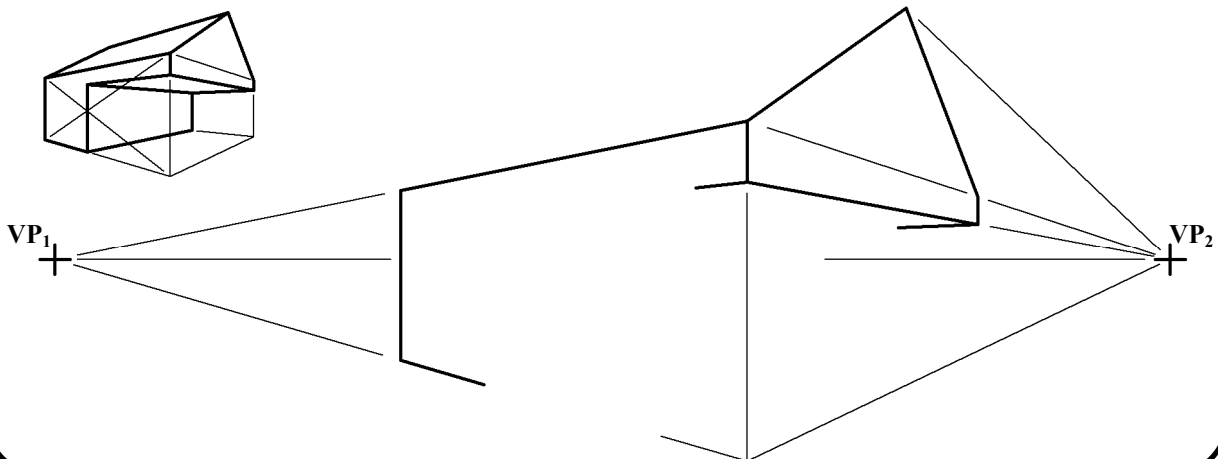


3. _____



4. _____

2. The figure shows the incomplete perspective drawing of an information stand. A 3D graphic is also shown. Complete the perspective drawing.



3. **Fig 1.** shows the logo for a dance school. The logo is composed of polygons and a circle as shown.

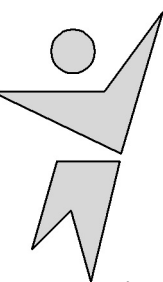
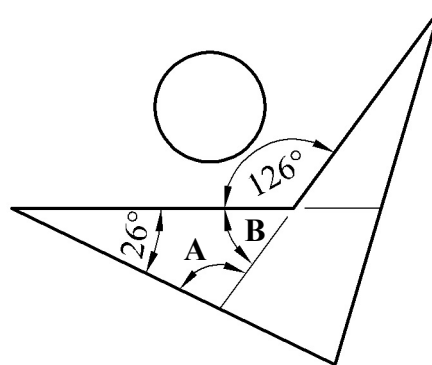
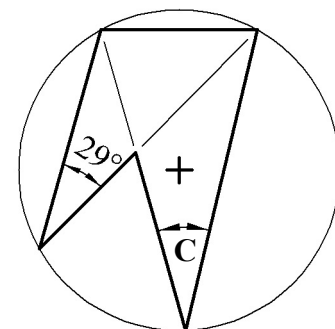


Fig. 1

A = _____

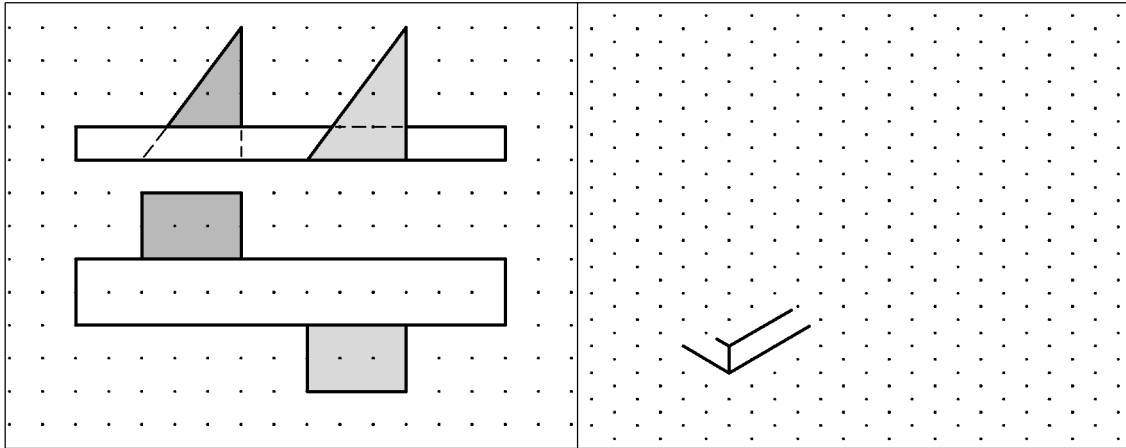


B = _____



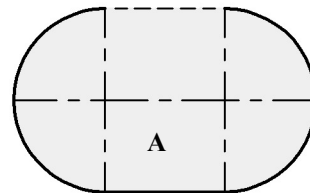
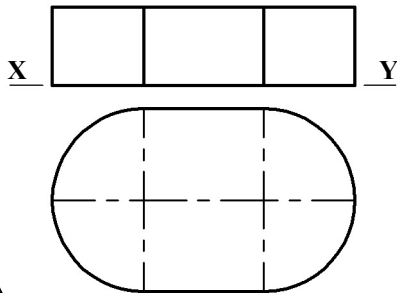
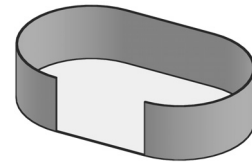
C = _____

4. The elevation and plan of a sprinter's starting block are shown on the square grid. Make a **freehand pictorial sketch** of the block. Colour or shade the sketch.



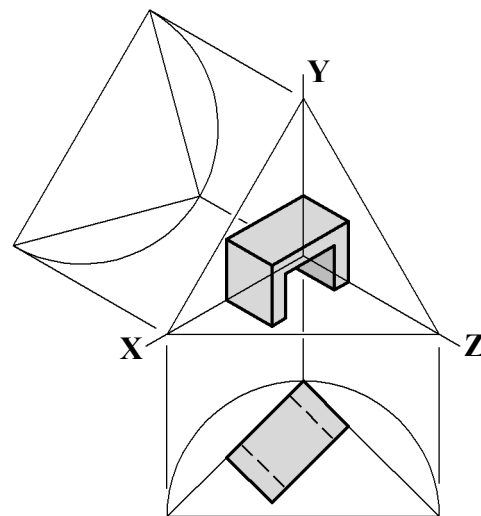
5. The elevation, plan and incomplete development of a dog bed are shown. A 3D graphic of the bed is also shown.

Complete the surface development of the dog bed at **A**.



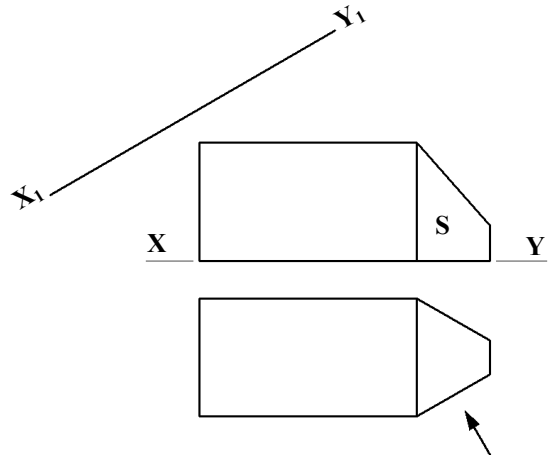
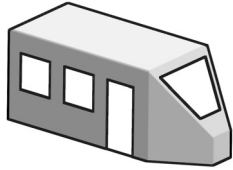
6. The figure shows an isometric projection of a stool drawn using the axonometric axes method. A plan positioned relative to the axes is also shown.

Complete the elevation of the stool in the correct position.



7. The figure shows the elevation and plan of a LUAS tram carriage. A 3D graphic of the carriage is also shown.

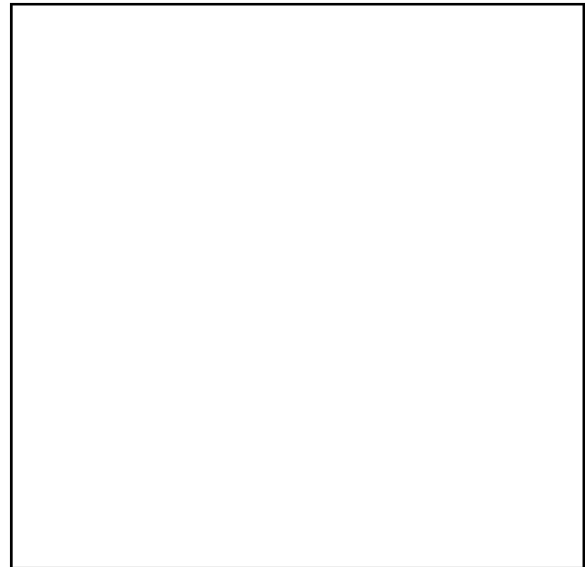
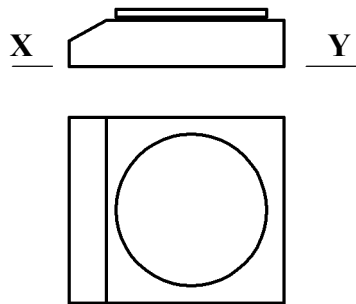
Project an auxiliary elevation of the tram carriage on the line X_1-Y_1 to show the true shape of the surface S .



8. The elevation and plan of a scientific scales are shown.

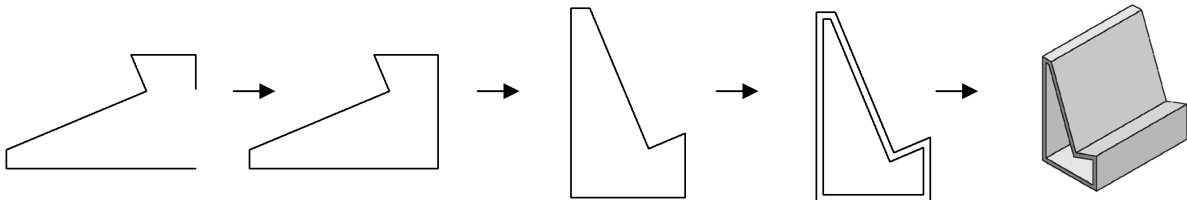
In the space provided, draw a **freehand pictorial sketch** of the scales.

Colour **or** shade the sketch.



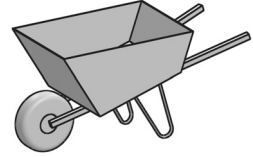
9. The sequence below shows the process of drawing a stand for a tablet computer using CAD software.

Write down **any three** CAD commands used in the sequence.

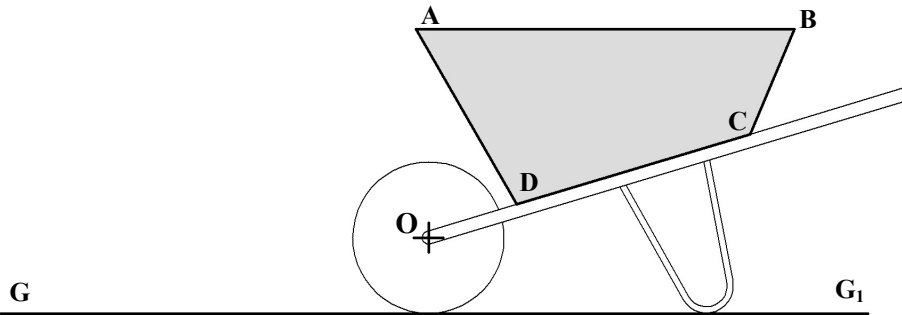


Any **three** CAD commands: _____

10. The figure shows the elevation of a wheelbarrow.
A 3D graphic of the wheelbarrow is also shown.

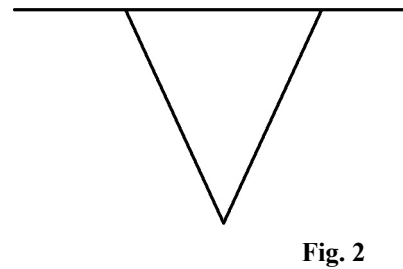
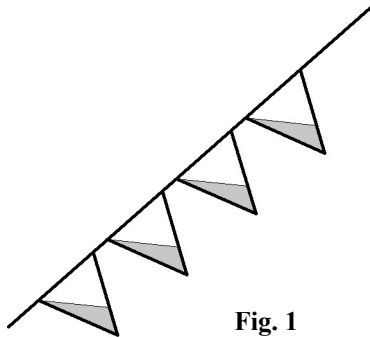


Rotate the shaded body of the wheelbarrow **ABCD** about point **O** until point **A** reaches the line **GG₁**.



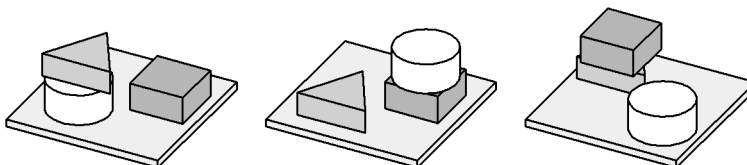
11. **Fig. 1** shows a line of triangular flags. One third of the area of each triangle is shaded as shown. **Fig. 2** shows the outline of a similar triangular flag.

Divide the area of the flag in **Fig. 2** to show the shaded portion.

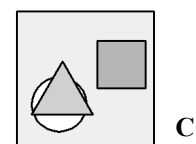
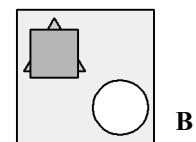
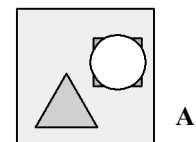


12. The graphic below shows three sets of children's blocks.
The plan of each set of blocks is shown on the right.

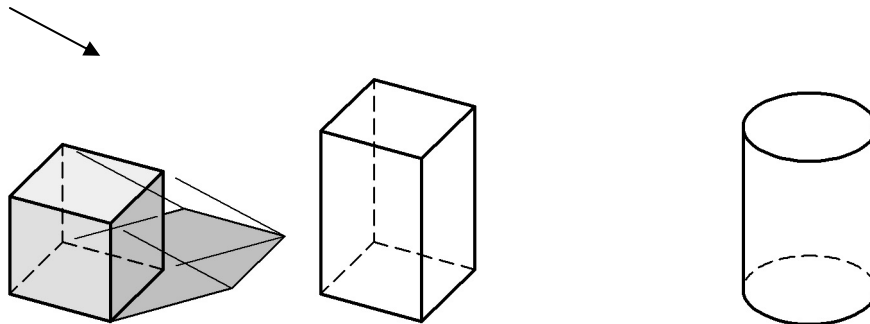
Match the correct letter with the appropriate graphic below.



1. _____ 2. _____ 3. _____



- 13.** The graphic shows three solids. Light is shining on the solids, as shown by the direction of the arrow. The shadow cast by the first solid has been completed. Draw **freehand sketches** of the shadows cast by the other two solids.



- 14.** Fig. 1 shows a design for a lounge chair. Fig. 2 shows the outline of a similar chair. Complete the outline of the chair in Fig. 2 by constructing a parabola in the rectangle ABCD with its vertex at E.

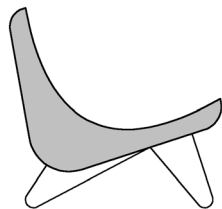


Fig. 1

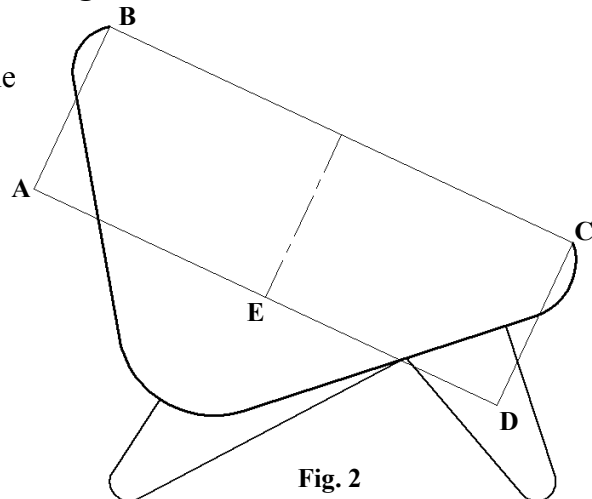


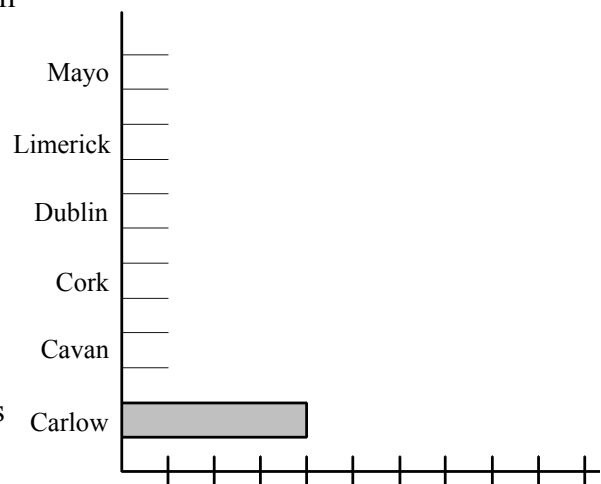
Fig. 2

- 15.** Six county teams competed in a football tournament. Shown below are the number of goals scored by each team during the tournament.

Carlow	-	4 goals
Cavan	-	5 goals
Cork	-	9 goals
Dublin	-	3 goals
Limerick	-	8 goals
Mayo	-	6 goals

Complete the bar chart to represent this information graphically.

Colour or shade the completed chart.



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