



**Coimisiún na Scrúduithe Stáit**  
*State Examinations Commission*

***Junior Certificate Examination, 2019***

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

***Monday, 17 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.

Centre Number

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

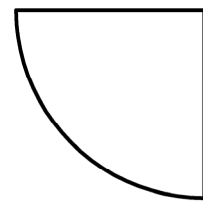
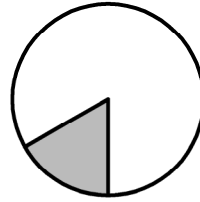
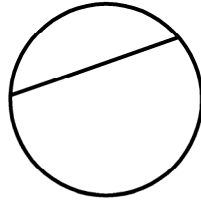
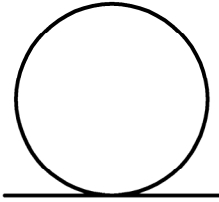
***Examination Number:***

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

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

- Chord
- Sector
- Quadrant
- Tangent



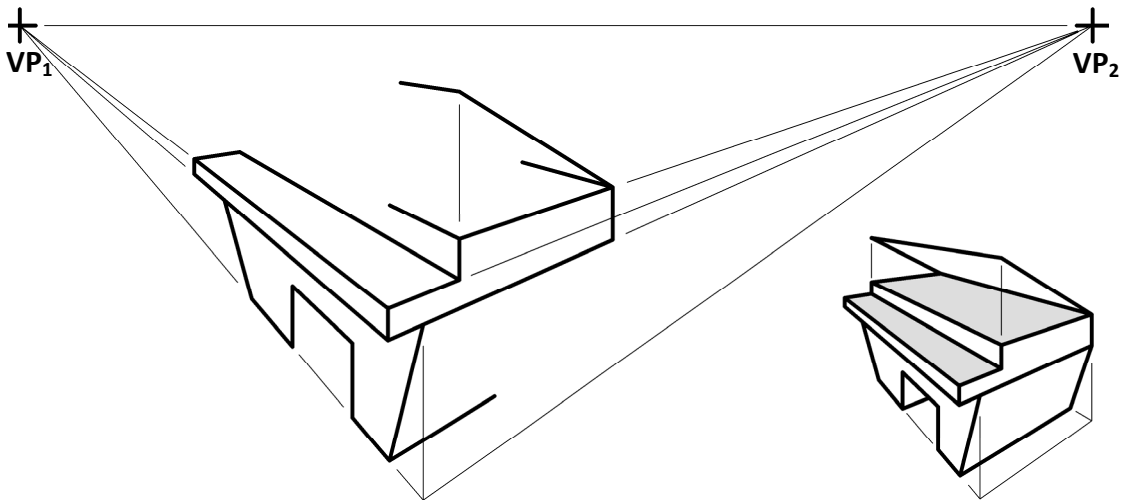
1. \_\_\_\_\_

2. \_\_\_\_\_

3. \_\_\_\_\_

4. \_\_\_\_\_

**2.** The figure shows the incomplete perspective drawing of an electric piano. A 3D graphic is also shown. Complete the perspective drawing.



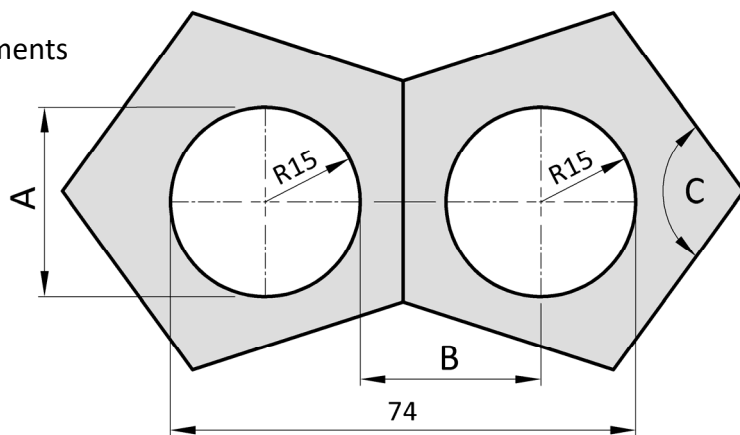
**3.** The figure shows the outline of a pair of 3D cinema glasses based on two regular pentagons.

Write down the measurements of **A**, **B** and **C**.

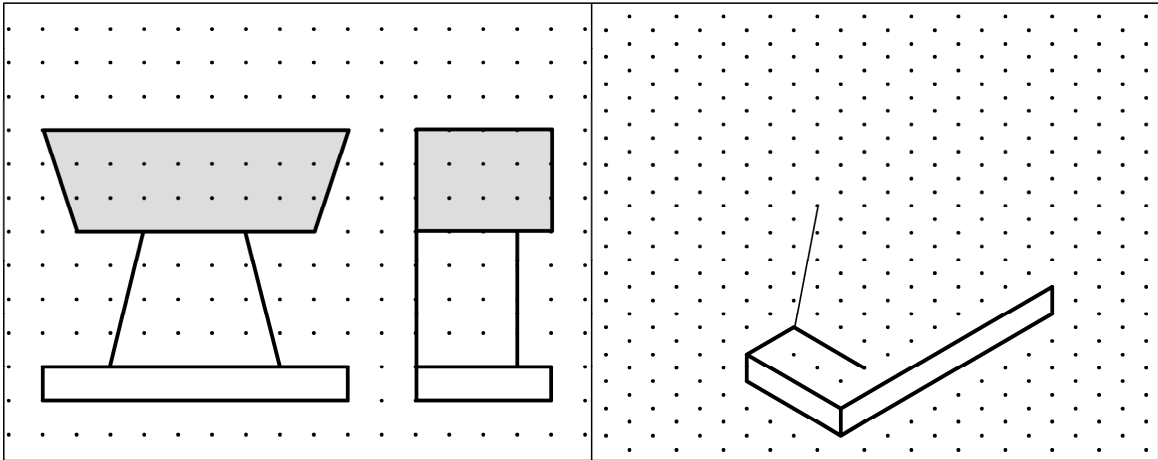
**A** = \_\_\_\_\_

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

**C** = \_\_\_\_\_



4. The elevation and end view of a weighing scales are shown on the square grid. Make a **freehand pictorial sketch** of the weighing scales. Colour or shade the sketch.

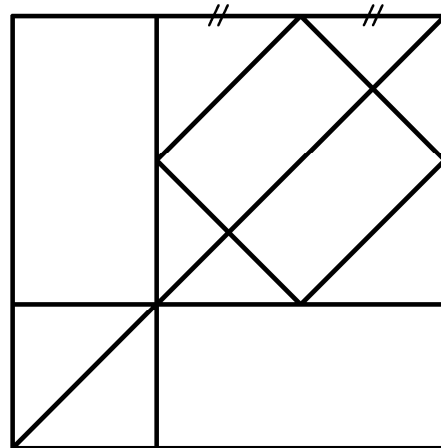


5. Shown is a graphical puzzle consisting of squares, rectangles and triangles. Count the number of squares, rectangles and triangles.

Squares \_\_\_\_\_

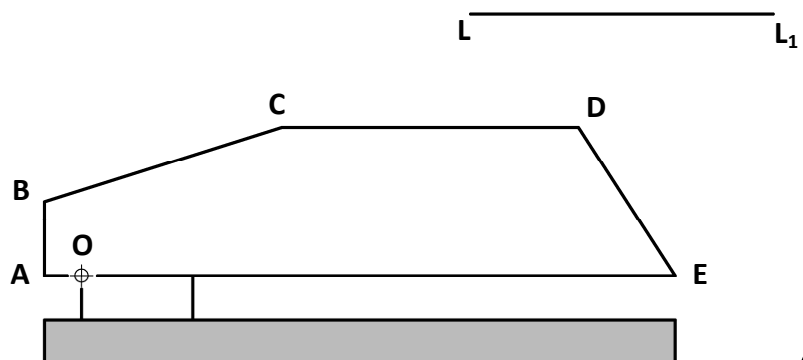
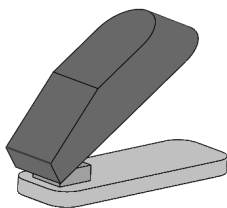
Rectangles \_\_\_\_\_

Triangles \_\_\_\_\_



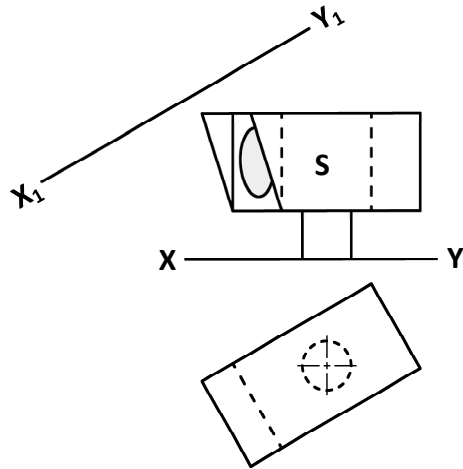
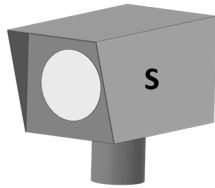
6. The figure below shows the elevation of a stapler. A 3D graphic is also shown.

Rotate **ABCDE** about point **O** until point **E** reaches the line **LL<sub>1</sub>**.



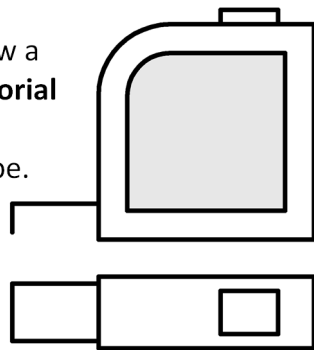
7. The figure shows the outline elevation and plan of a security camera. A 3D graphic is also shown.

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

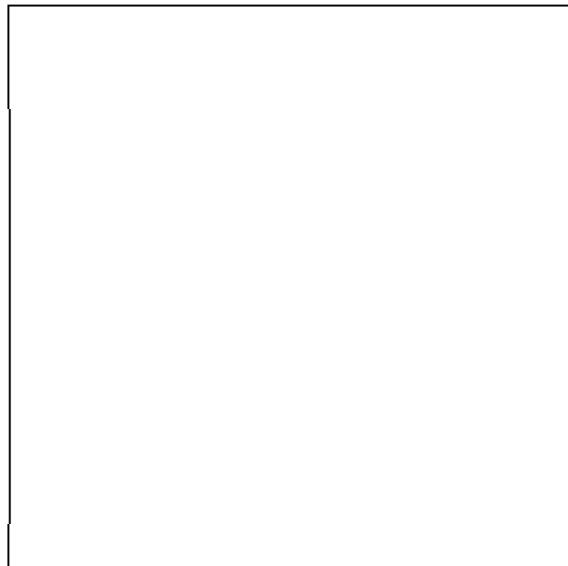


8. The elevation and plan of a measuring tape are shown.

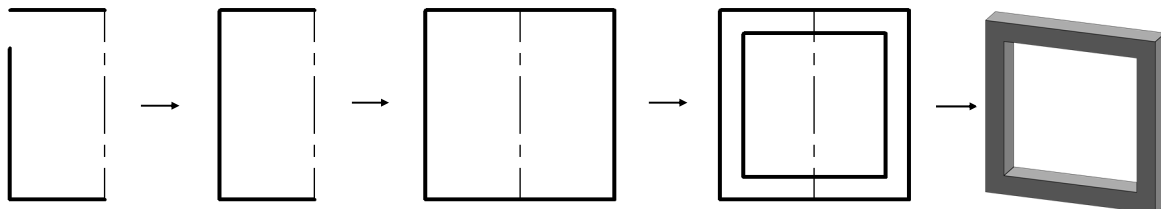
In the space provided, draw a **freehand pictorial sketch** of the measuring tape.



Colour **or** shade the completed sketch.



9. Write down **any three** CAD commands used to edit the drawing of the picture frame as shown in the sequence below.



Any **three** CAD commands: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**10.** Fig. 1 shows a design for a glamping pod. Shown in Fig. 2 is the incomplete elevation of the glamping pod.

Complete the elevation in Fig. 2 by constructing a parabola in the rectangle ABCD with its vertex at O.

Show clearly all construction.

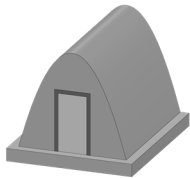


Fig. 1

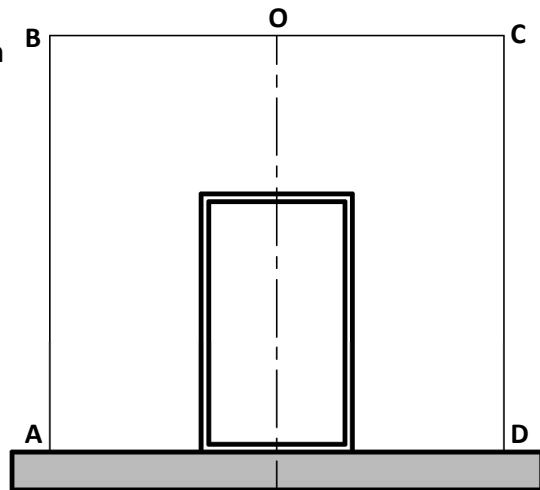


Fig. 2

**11.** Fig. 1 shows the development of an object.

Three images of objects **before** development are shown on the right.

From the images on the right match the letter for the development shown in Fig. 1.

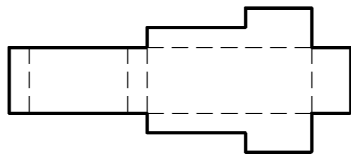
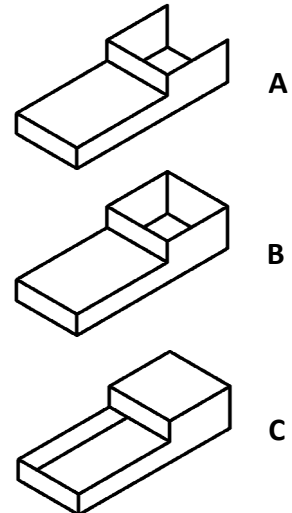
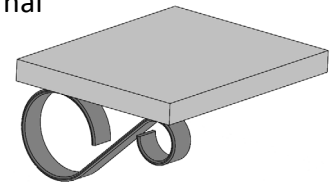
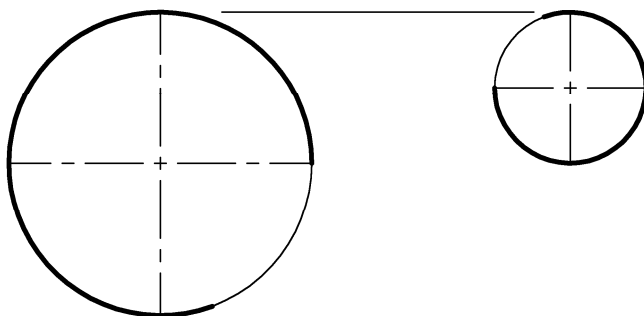


Fig. 1 = \_\_\_\_\_

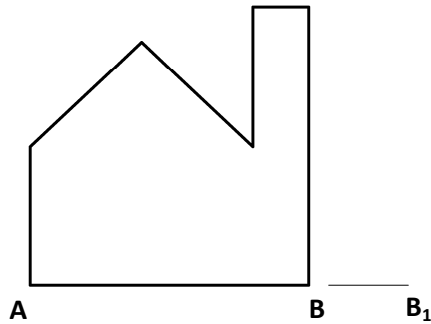


**12.** The incomplete outline of a shelf support is shown. A 3D graphic of the support is also shown.

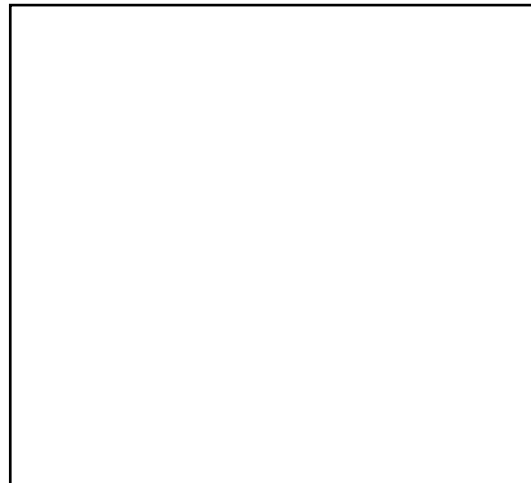
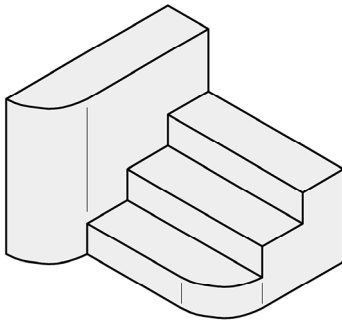
Complete the outline of the support by constructing the internal tangent to the two given circles.



- 13.** The figure shows the outline of a house.  
Draw a new outline similar to the given house, with the length **AB** increased to **AB<sub>1</sub>**.



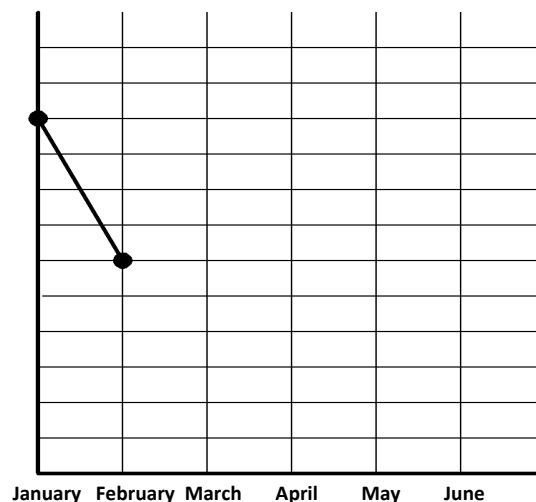
- 14.** The graphic shows a set of steps.  
Draw a well-proportioned **freehand** sketch of the **plan** of the steps.



- 15.** Car sales in a garage were recorded over a period of six months.  
The following are the results:

- January - 50
- February - 30
- March - 55
- April - 15
- May - 25
- June - 45

Complete the chart to represent this information graphically.



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