A

WARNING:

You must return this paper with your answerbook, otherwise marks will be lost.

Examination Number

_____

An Roinn Oideachais

JUNIOR CERTIFICATE EXAMINATION

TECHNICAL GRAPHICS

HIGHER LEVEL

SAMPLE EXAMINATION PAPER

Time 3 Hours

Total Marks 400

INSTRUCTIONS

1. ***Answer any twelve of the short answer questions in Section A (120 marks)***
   (all questions in this Section carry equal marks)
2. ***Answer the questions in the space provided.*** *(Sketches should be in pencil)*
3. ***Hand up Section A (this Section) at the end of the examination.***
4. ***Answer any four of the six questions in Section B (280 marks)***
   (all questions in this Section carry equal marks)
5. ***Ensure you write your examination number on all the sheets you hand up.***

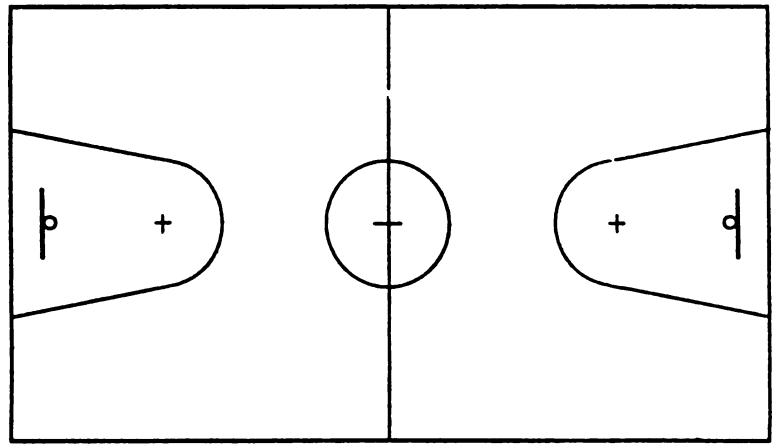
For examiners use only

QUESTION	MARK
Section A (total)	
Section B 1	
2	
3	
4	
5	
6	
TOTAL →	

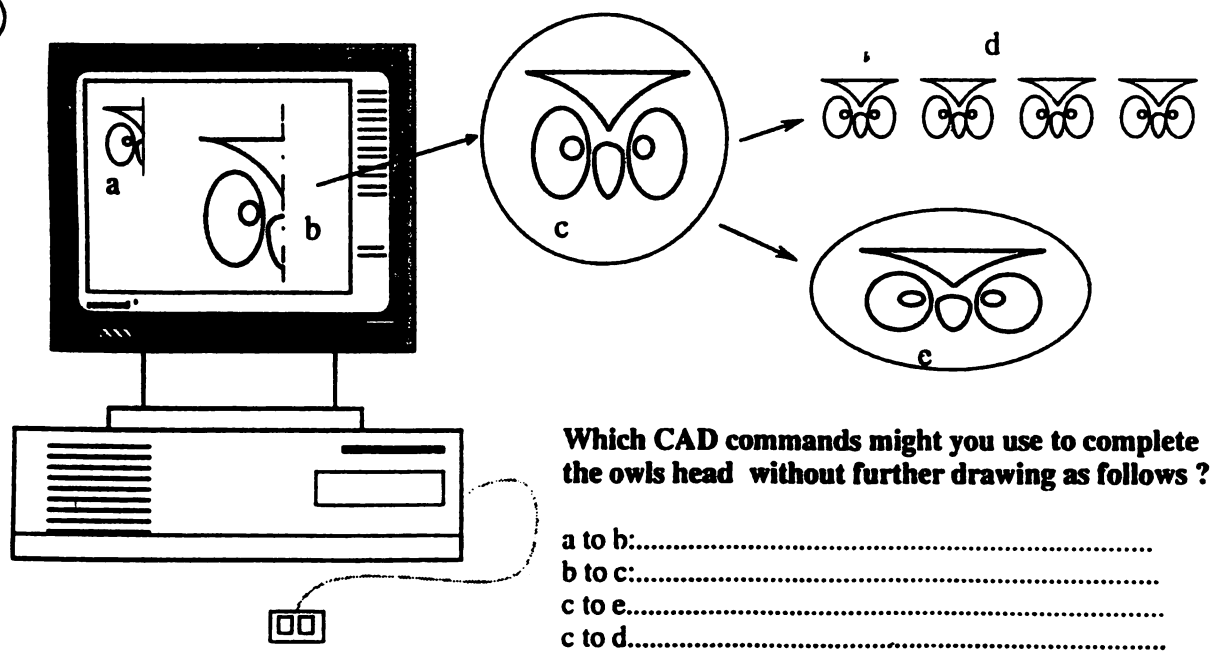
Centre number

SECTION A *(ANSWER ANY TWELVE QUESTIONS - All questions carry equal marks)*

1 **The outline of an indoor games pitch is shown. If 2mm represents 1m measure the drawing and insert four of the main dimensions.**



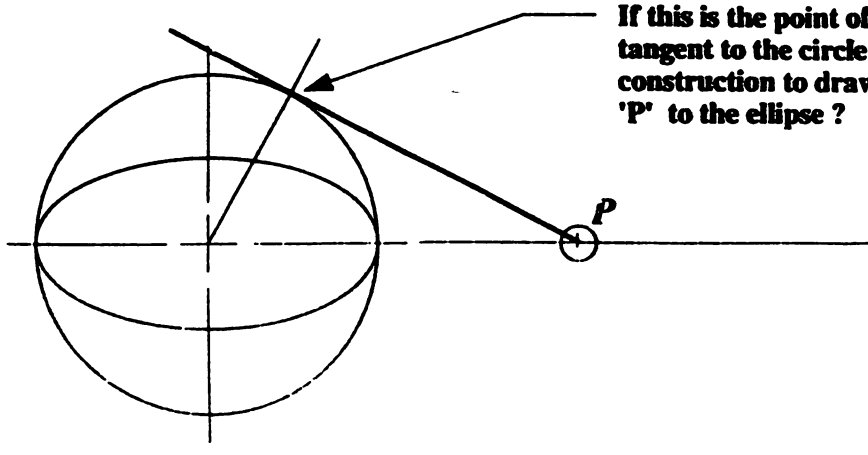
2



Which CAD commands might you use to complete the owls head without further drawing as follows ?

a to b:.....
b to c:.....
c to e.....
c to d.....

3



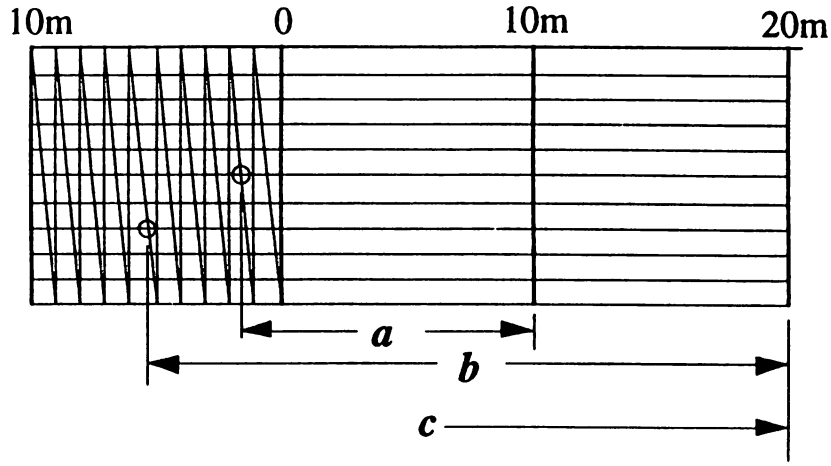
If this is the point of contact of a tangent to the circle from 'P', show a construction to draw a tangent from 'P' to the ellipse ?

4

(i) Write in the measurements for a and b.

a = ...

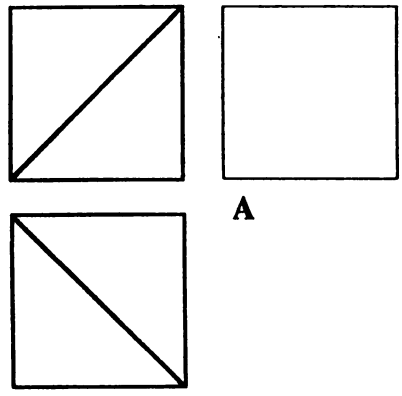
b = ...

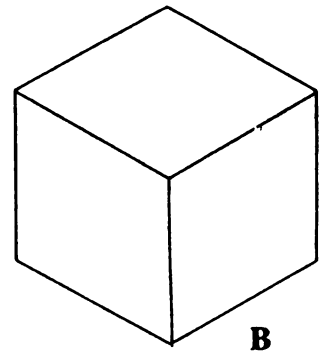


(ii) Finish the dimension line c to show 28.6m and circle the correct point on the scale.

5

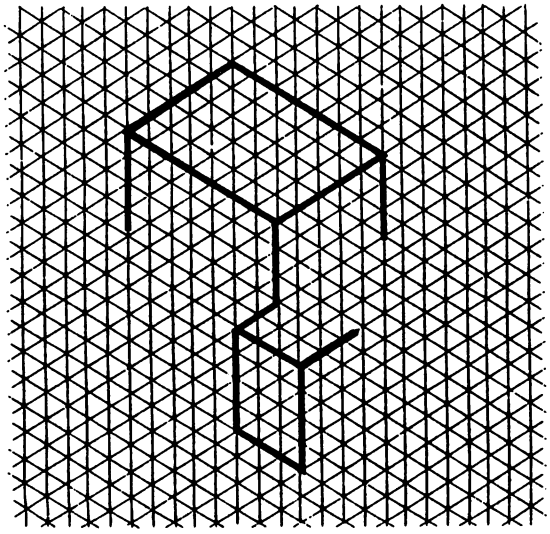
Complete the side view 'A' and sketch the pictorial in the box 'B'.

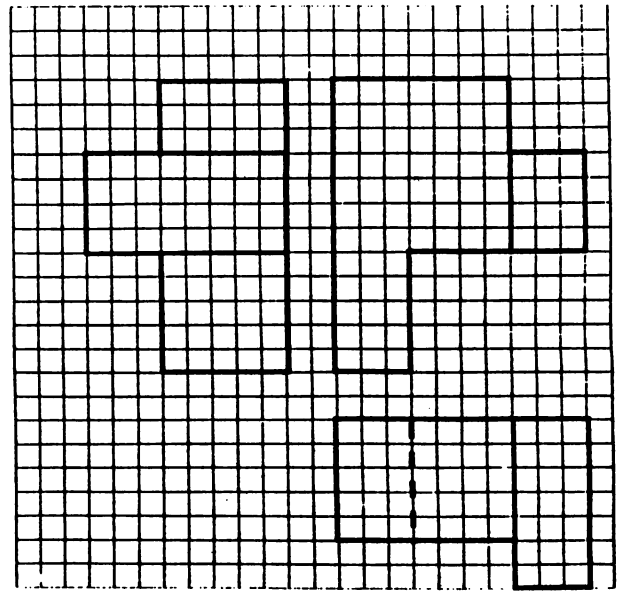




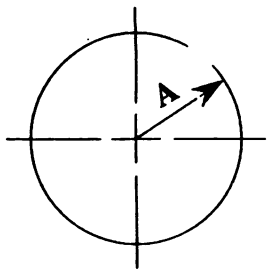
6

Shown in the square grid are three views of an object. Complete the isometric sketch of the object in the grid below.

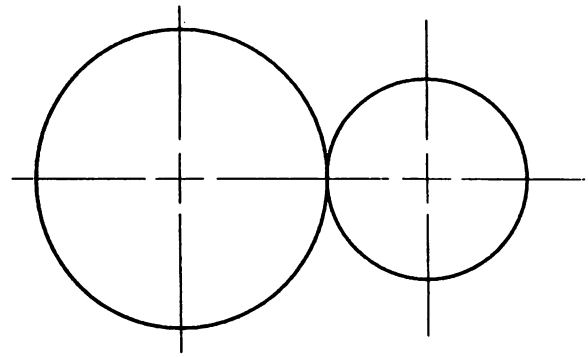




7



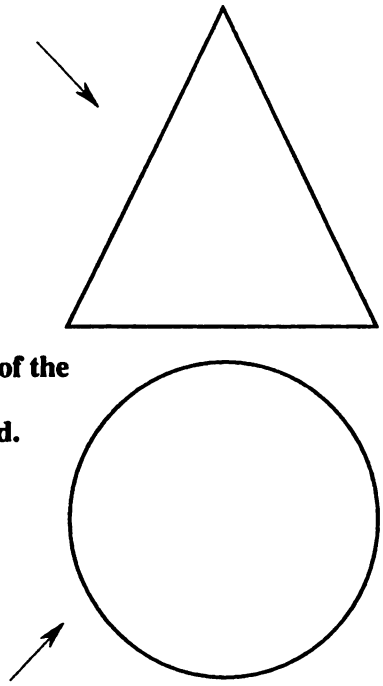
Draw a circle radius 'A' to touch the other two circles. Show the *points of contact.*



8 ***Answer a or b***

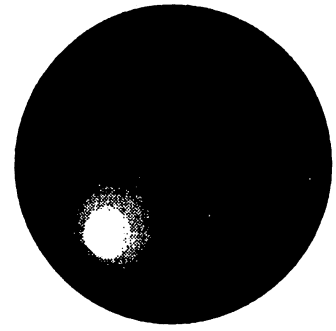
(a)

***Shade* the surface of the cone when the light is as indicated.**



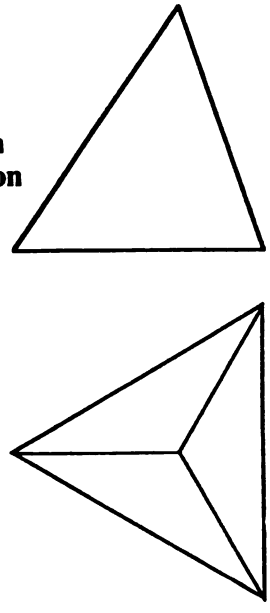
OR

(b) Sketch the *shadow* cast by the sphere resting on the horizontal plane when the light is as illustrated.

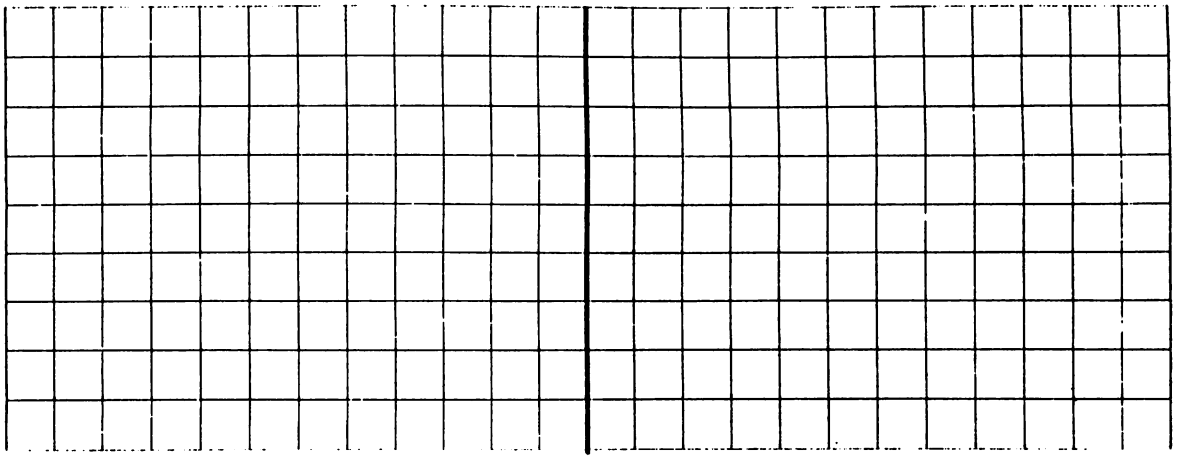


9

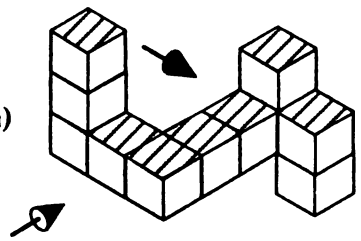
The plan and elevation of a regular tetrahedron is shown. Draw separately the *surface development* of the tetrahedron showing the fold lines.



10



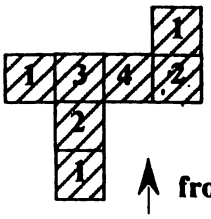
(a)



Using the grid:

(a) Sketch the views in the direction of the arrows.

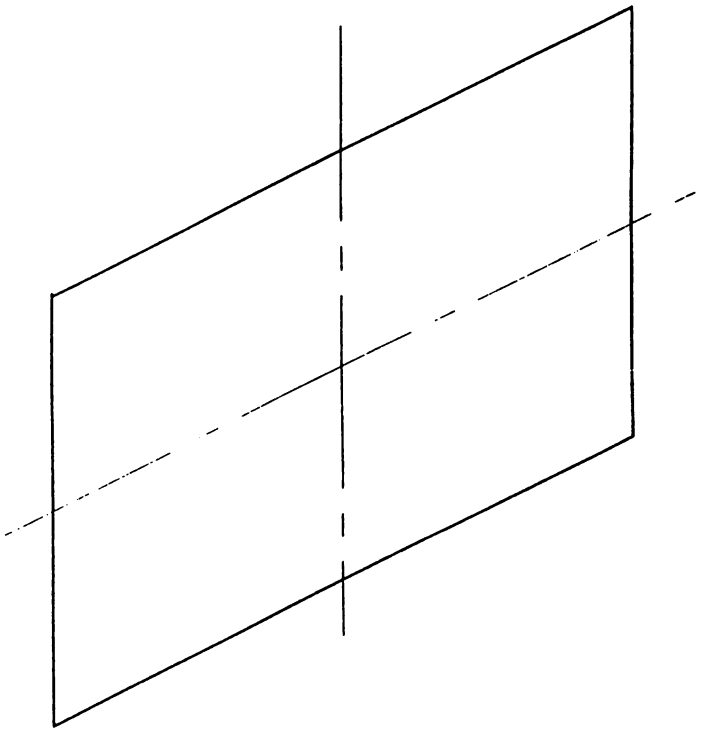
(b) is a number of cubes on the horizontal plane (a map plan). Sketch the rear view and a side view.



(b)

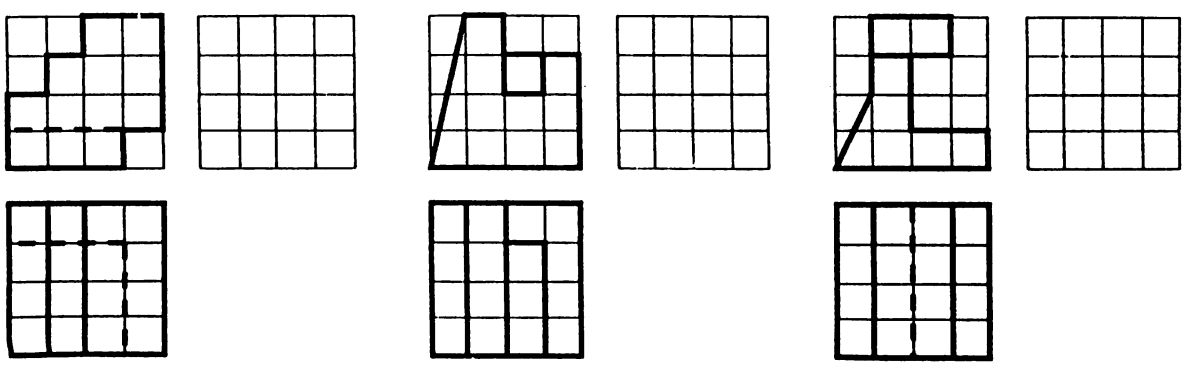
11

Inscribe an ellipse in the adjacent parallelogram.

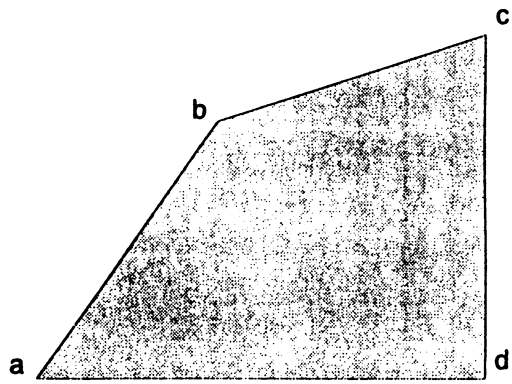


12

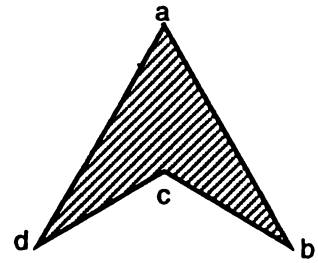
Complete the views in the grids provided



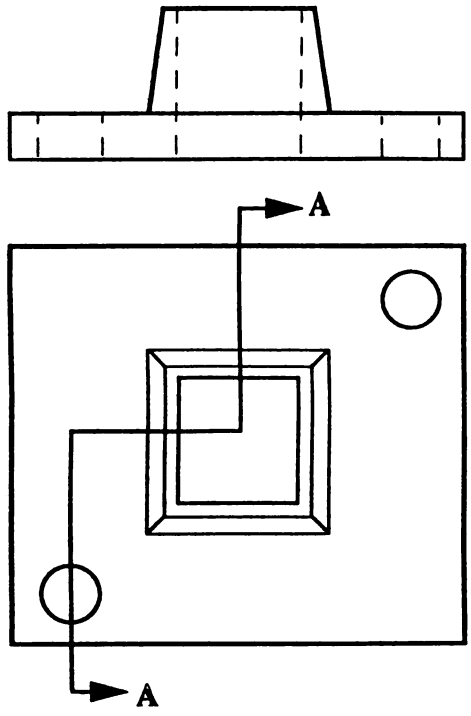
13 **Draw a *square* equal in area to the shape below**



14 **Draw the image of the figure in *central symmetry* through "p".**



15



section A - A

Draw the *section A-A* of the plastic fitting.