

JUNIOR LYCEUM ANNUAL EXAMINATIONS 2010

Educational Assessment Unit - Education Division

FORM 5 GRAPHICAL COMMUNICATION (TECH. DES.) Time: 2 hours

Instructions

Write your name and class on ALL sheets.

Attempt ALL questions.

Questions should be attempted on the pre-printed answer sheets provided.

All answers are to be drawn accurately, with instruments, unless otherwise stated.

All construction lines MUST be left on each solution to show the method used.

Drawing aids may be used.

Information

All dimensions are in millimetres.

Estimate any dimensions not given.

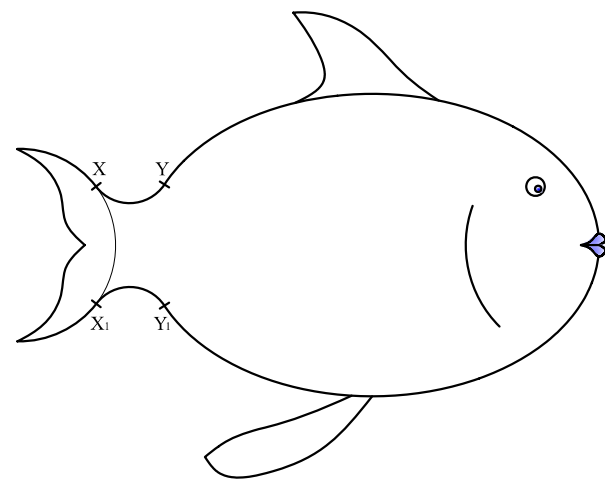
Marks will be awarded for accuracy, clarity and appropriateness of construction.

NAME: _____

CLASS: _____

Question No.	1	2	3	4	5	6	Total Marks
Mark	15	15	15	20	15	20	100
Marks awarded							

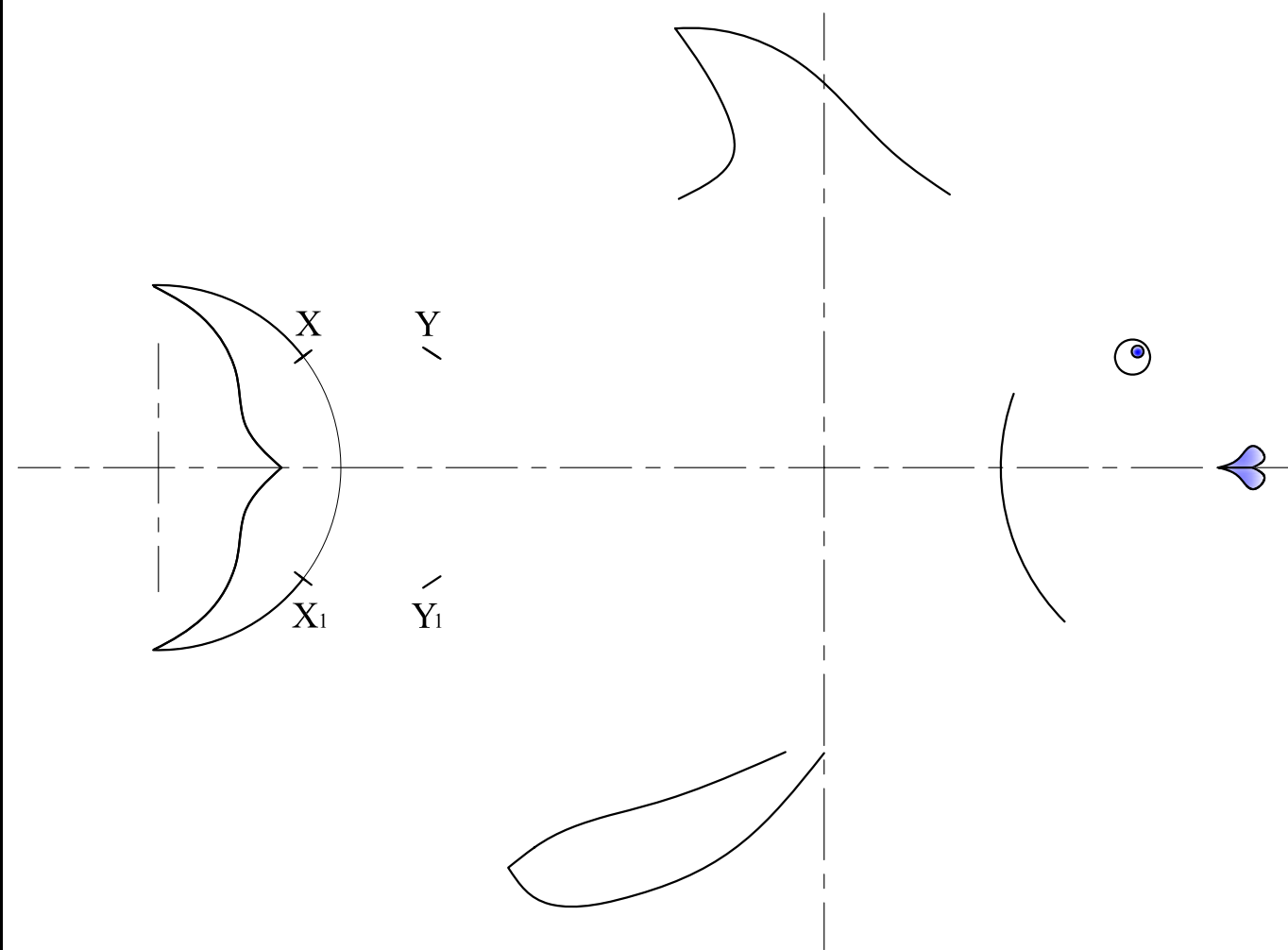
1. The outline drawing of an elliptical fish is shown
 In the given start lines below construct:
 a) an ellipse having a major axis of 120mm and a minor axis of 80mm.
 b) a normal on the ellipse at point marked Y to locate the centre of the arc that links the body of the fish to the tail.



The radius of the arc is to be found at the intersection between the normal of the ellipse and the normal of the circle at point X. Reflect or repeat construction on X₁, Y₁.

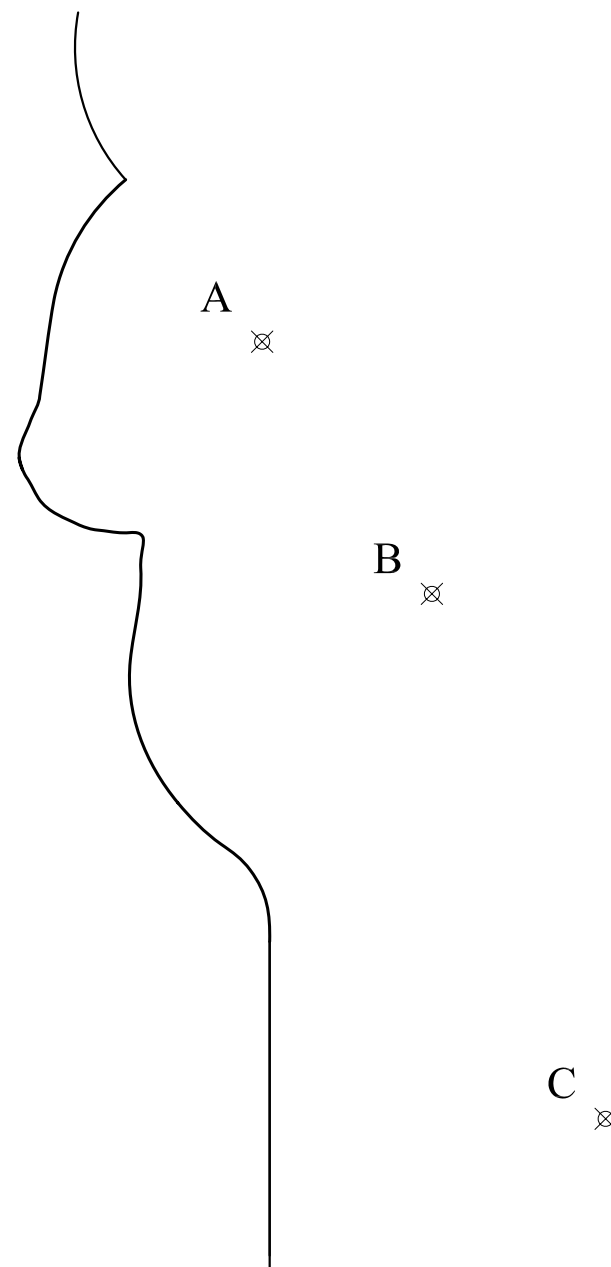
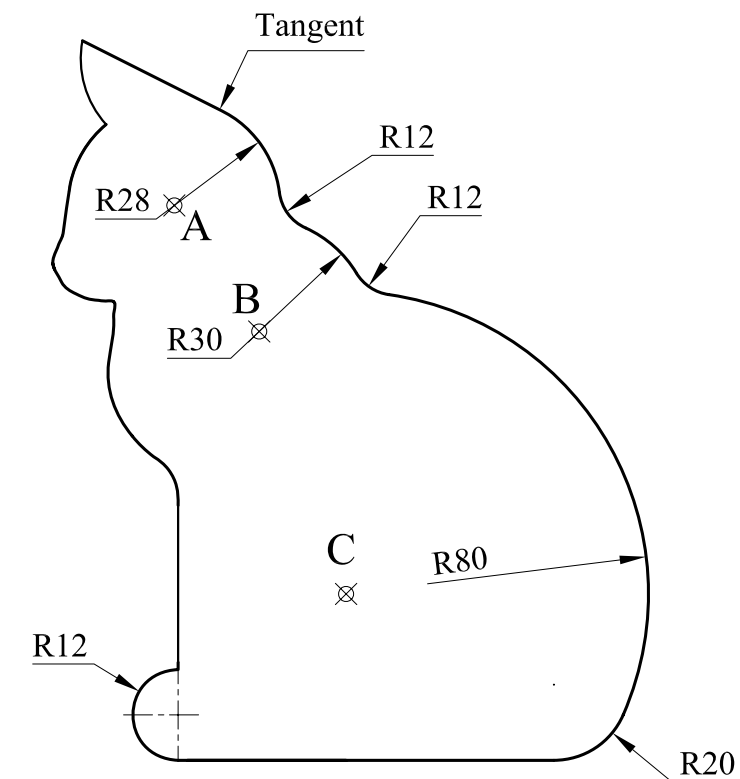
Leave all construction lines visible.

15 marks



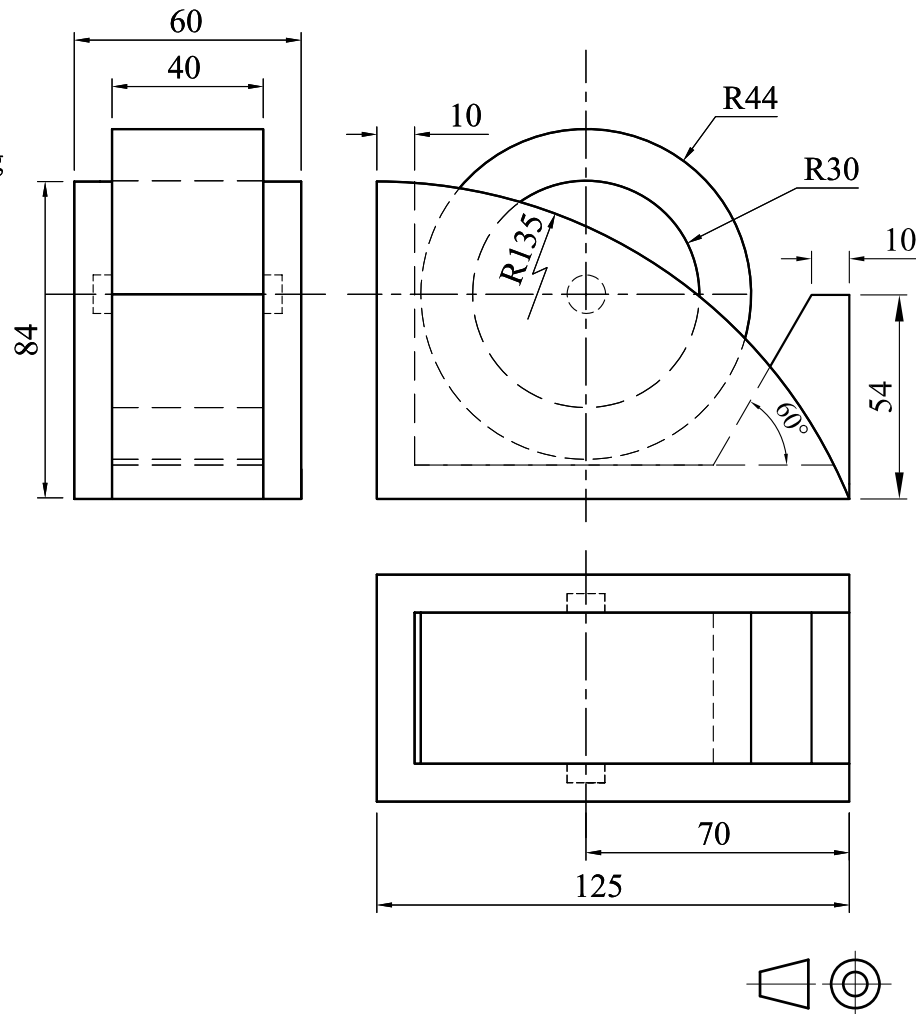
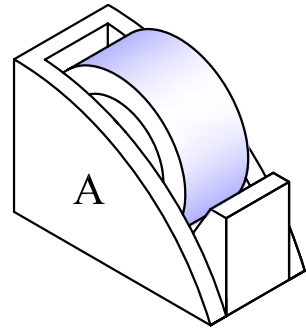
2. The figure on the right shows the profile of a cat.
 Centres of arcs R28, R30 and R80 are marked A, B and C respectively.
 Using the given start lines complete the figure showing clearly the constructions to locate the centres, the tangential points and the indicated tangent.

15 marks



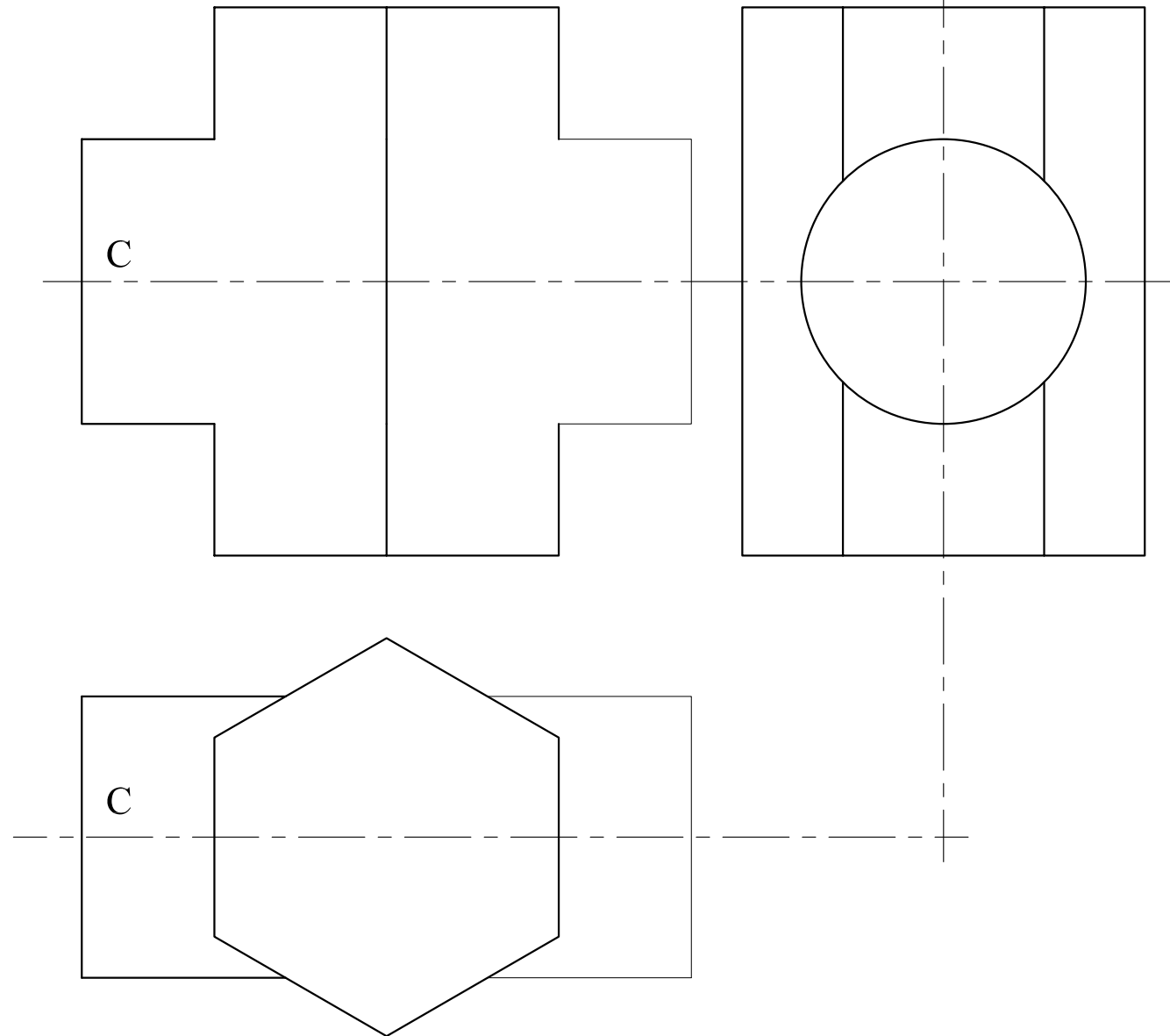
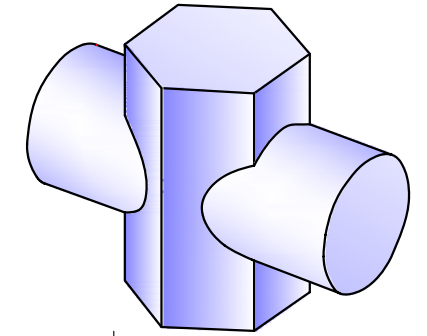
3. An orthographic projection and an isometric view of a tape dispenser is given. Using the given start line and placing face A in the foreground, draw a cabinet oblique view of the object.

15marks



4. The bollard shown, which is used for mooring boats consists of a hexagonal pillar intersected by a cylinder. An incomplete front elevation, an end elevation and a plan are given.
 a) Complete the front elevation by constructing the curve of intersection of the **left hand branch piece only**.
 b) Construct the development of the cylindrical portion marked C on the given start line below.

20 marks

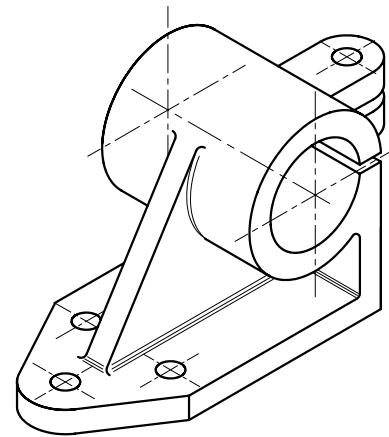


SURFACE DEVELOPMENT OF BRANCH 'C'

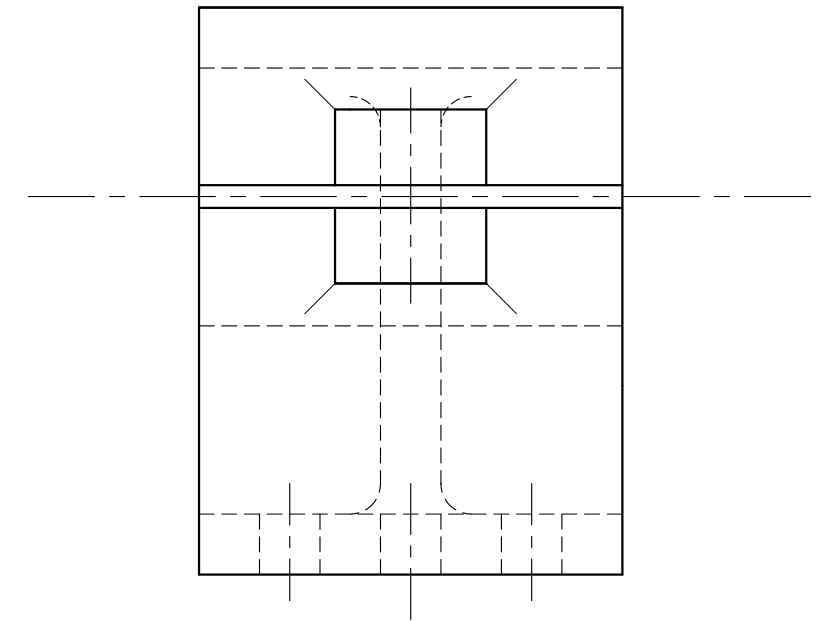
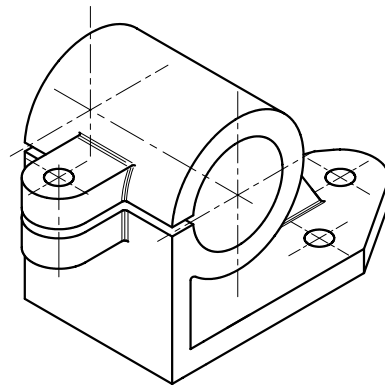
Sheet 2 of 4

5. The figures below show a complete end elevation, a complete plan and two pictorial views of a **BRACKET**. Draw full size, in first angle orthographic projection: a sectional front elevation on the section plane **A - A** in the direction indicated by the arrows. Insert hatching (section) lines where necessary. No hidden detail is required in the solution. Add the following to your drawing
- (i) the appropriate symbol to show the projection angle used.
 - (ii) the statement regarding the section (A -A), underneath the sectional view.

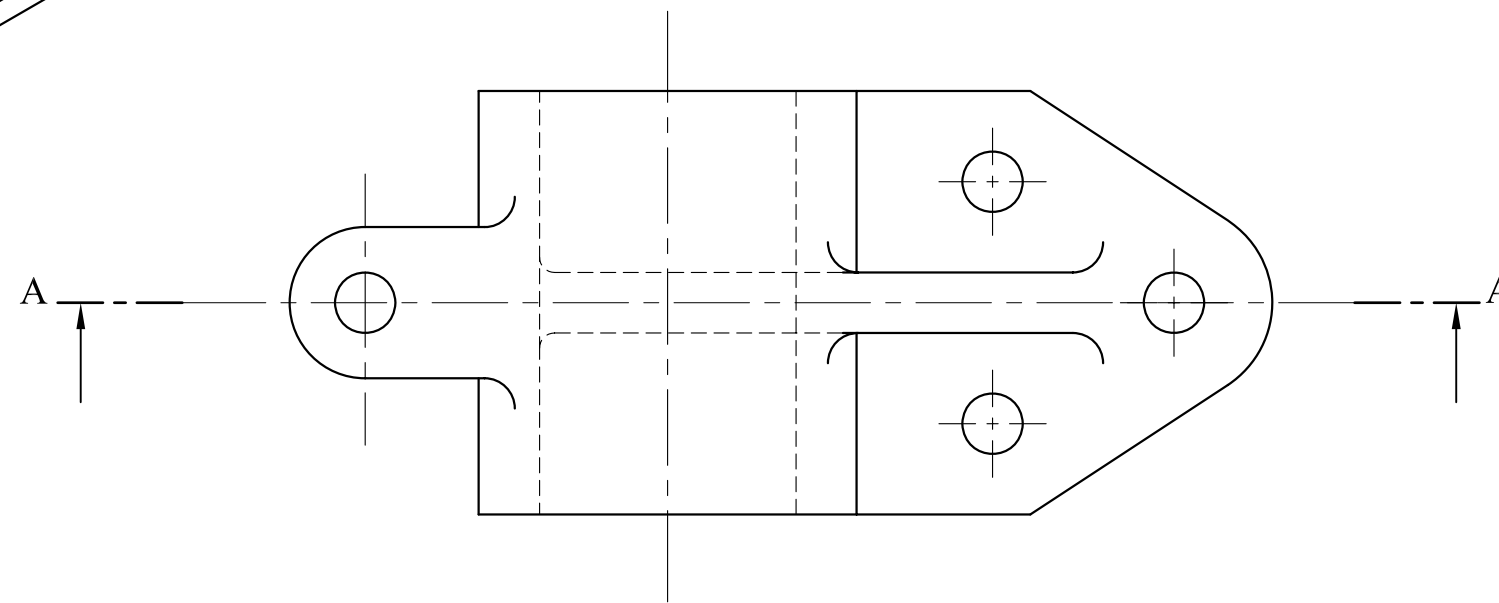
15 marks



Pictorial views



END ELEVATION



PLAN

Projection angle

6. The front, side and plan views of a commemorative stone are given in first angle projection.
 Project an **auxiliary front** as seen when looking in the direction of arrow 'A'.
 Do not include any hidden detail to your drawing.
 All construction lines must be clearly shown. 20 marks

