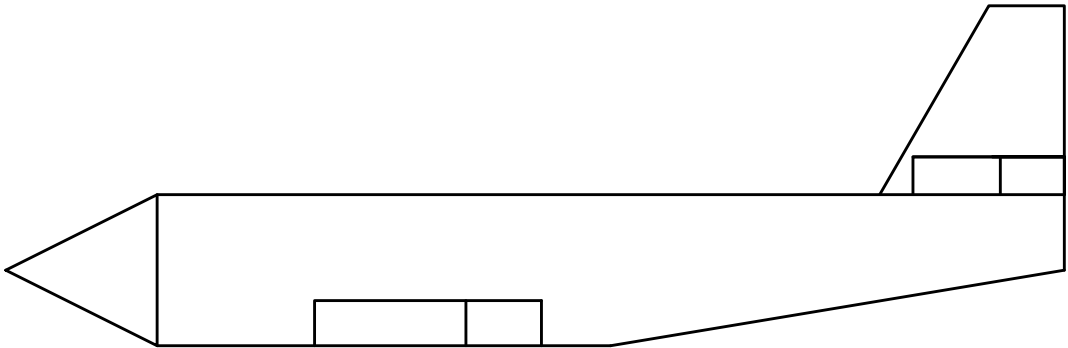
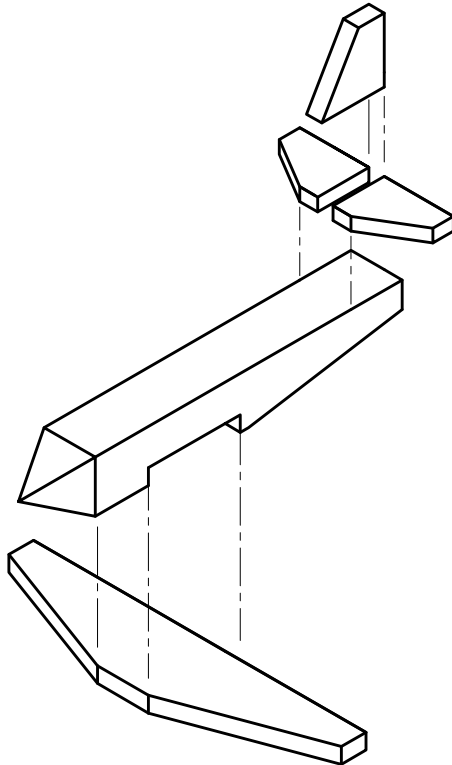
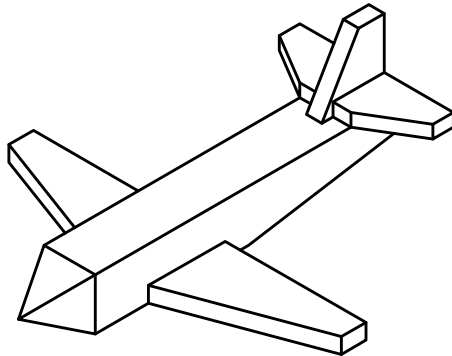


Question 1. An isometric view and an exploded view of a wooden toy aeroplane are shown below. Two orthographic views of the toy are given on the right. In the space provided :

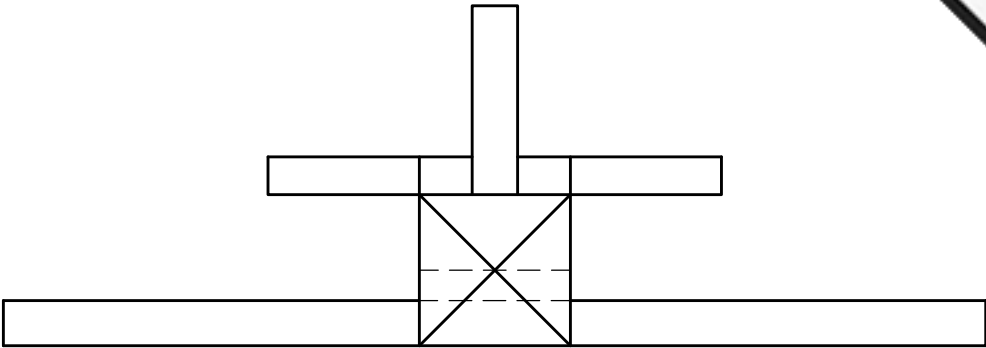
- a. Project a PLAN view.
- b. Write the projection angle (1<sup>st</sup> angle or 3<sup>rd</sup> angle).
- c. Draw the projection symbol.

*Note: Show the five hidden lines in the plan view.*

(16 marks)



FRONT VIEW



END VIEW

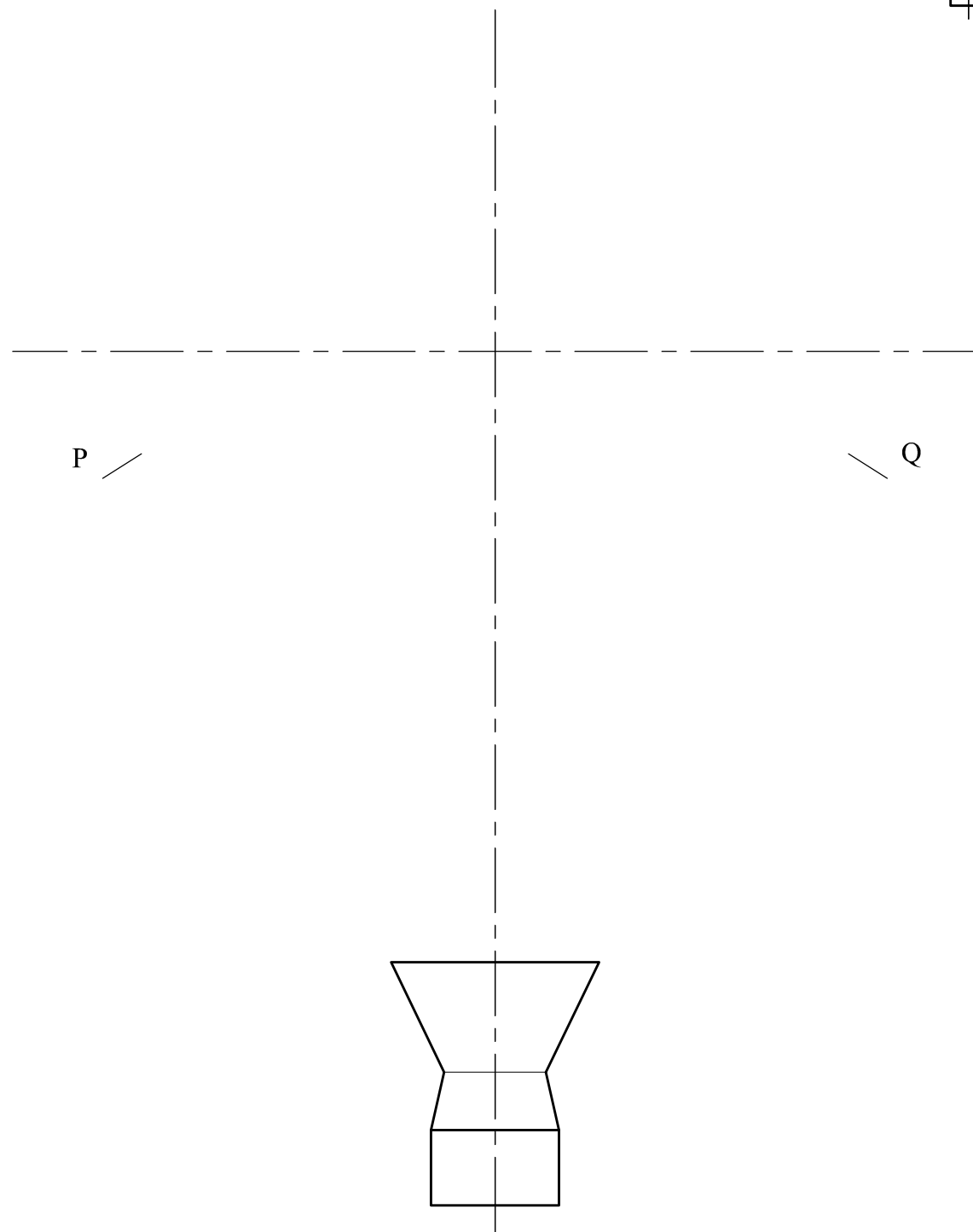
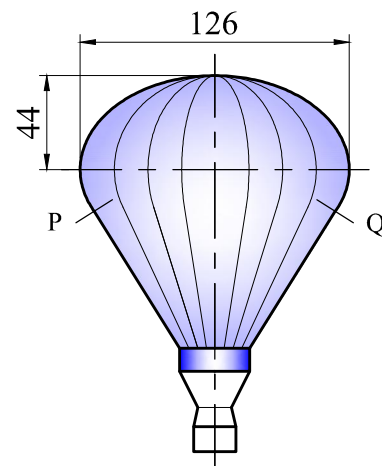
PLAN VIEW

..... ANGLE PROJECTION -----

PROJECTION SYMBOL

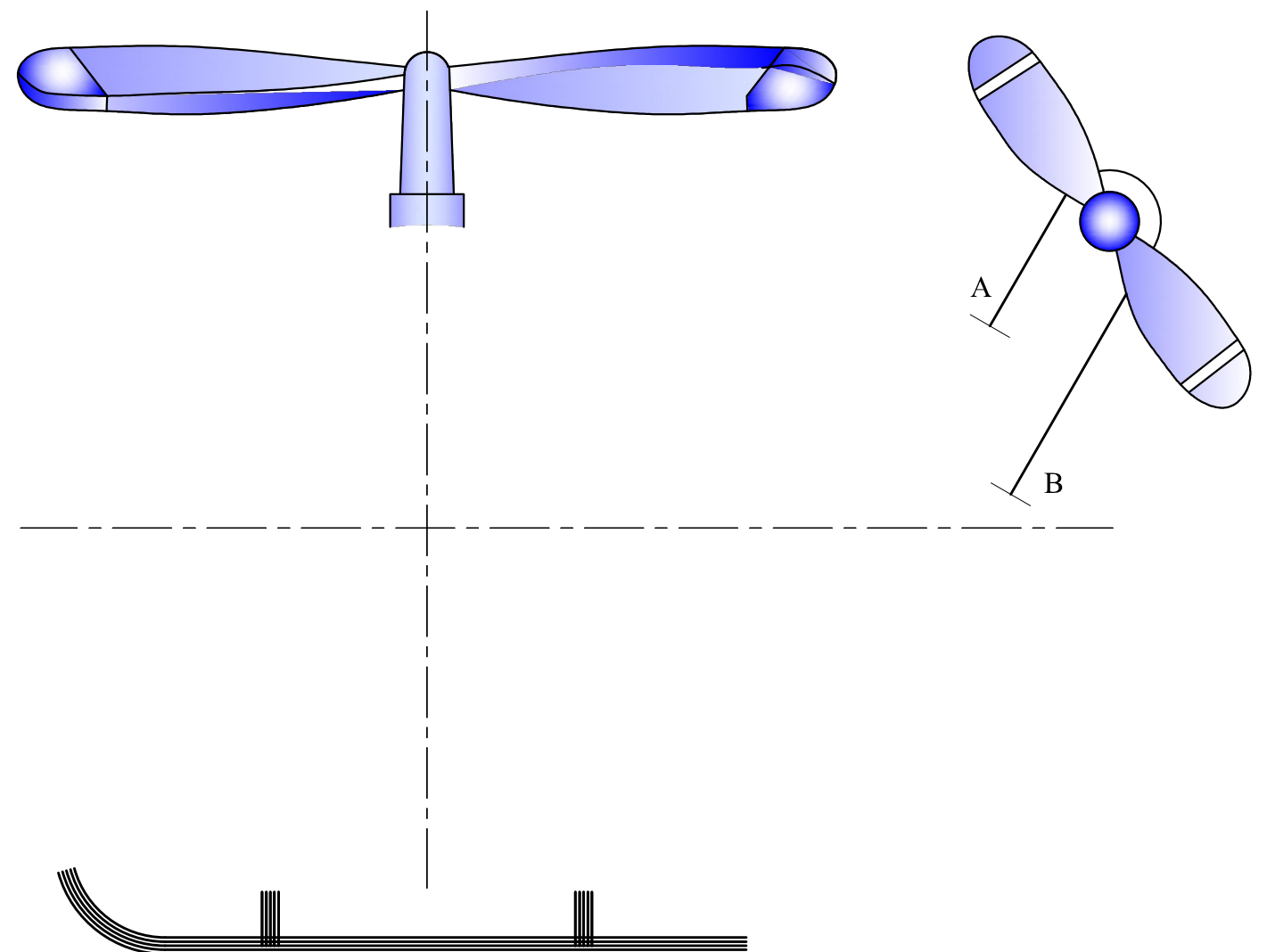
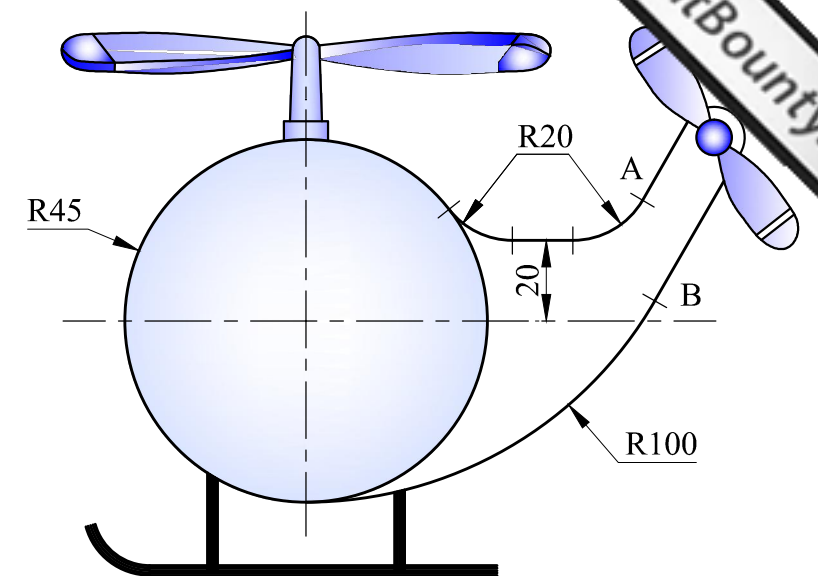
Question 2. The profile of a hot air balloon consists mainly of a part ellipse and two tangential straight portions. On the given start lines and using the given dimensions:

- Construct a part ellipse PQ major axis 126mm and minor axis 88mm.
  - Locate geometrically the Focal Points.
  - Construct tangents at P and Q and complete lower part of the balloon.
- (15 marks)

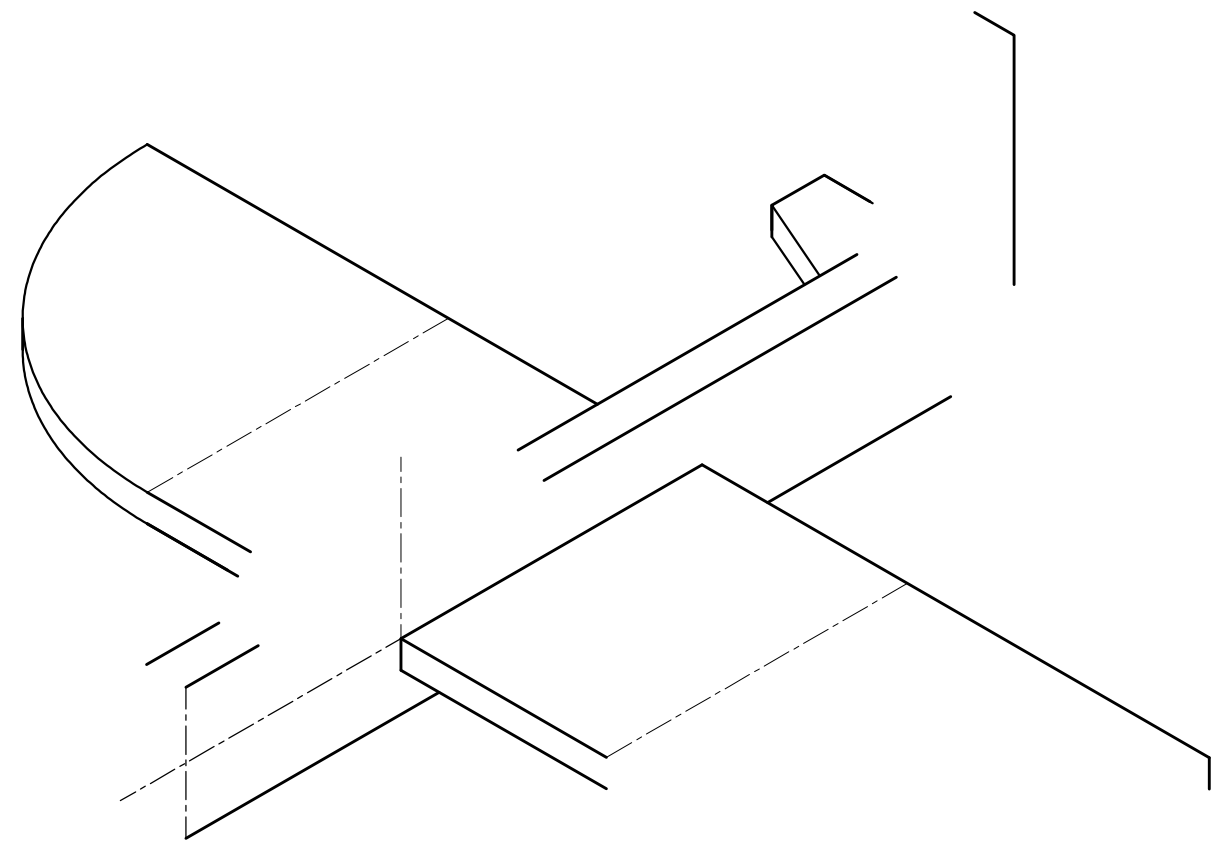
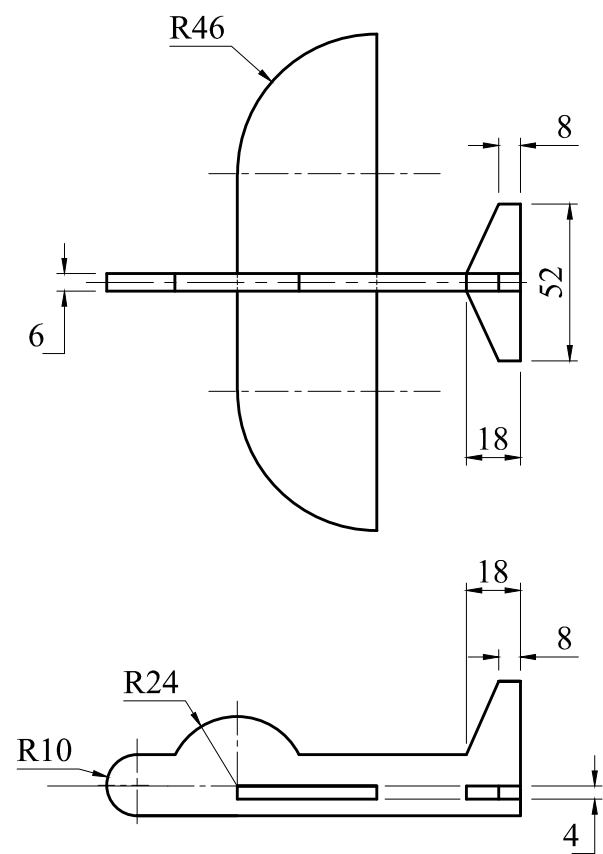
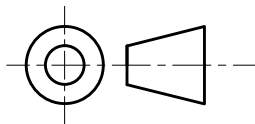


Question 3. A dimensioned profile of a toy helicopter is given. Using the given start lines, complete the outline showing clearly the constructions used to locate centres and points of tangencies. Complete the two supports.

Note:  
Dashes A and B are tangential points.  
(15 marks)



Question 4. Two orthographic views of a Balsa Wood Glider are given on the right. An incomplete isometric view of the glider is given below. On the given start lines and using the given dimensions, complete the isometric drawing. (16 marks)



Question 5. The three standard ISO pictograms shown below are designed to help travellers in airports. In the space provided below, design a pictogram that indicates:

**DEPARTING AEROPLANE FLIGHTS**

*Note: Shade your drawing to match the given pictograms.*

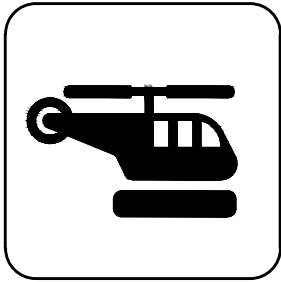
(14 marks)



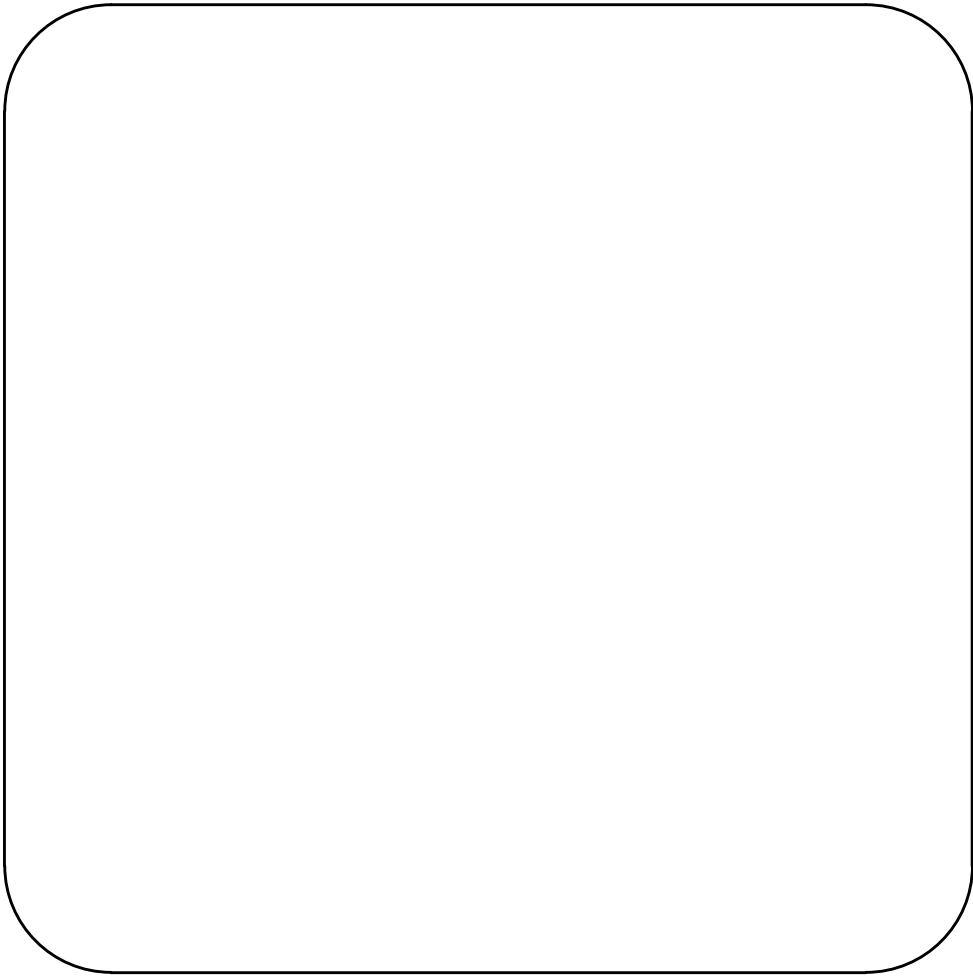
CUSTOMS



TICKET PURCHASE



HELICOPTER

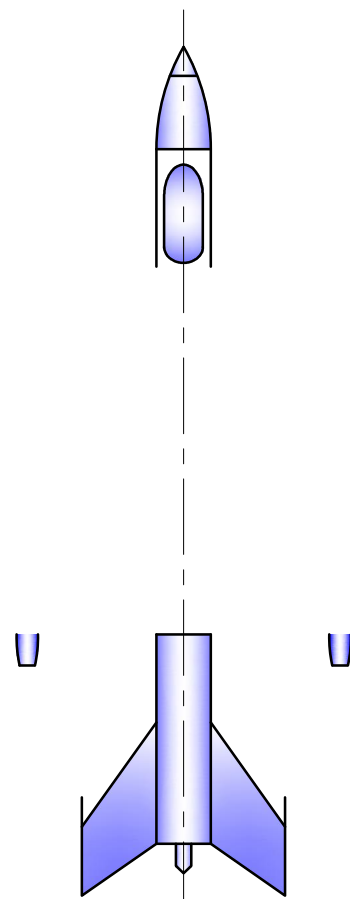
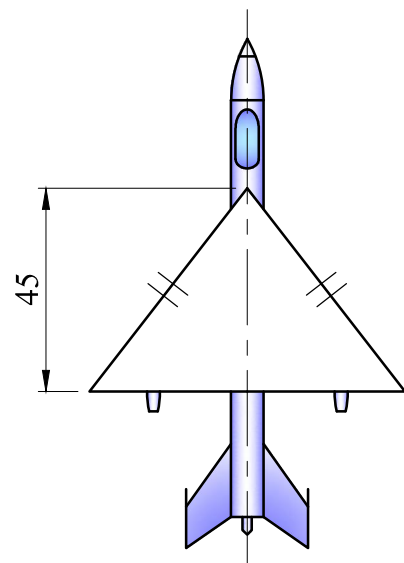


DEPARTING AEROPLANE FLIGHTS

Question 6. The drawing of a military jet is shown on the right. The start lines of the same drawing are given below.

- a. Complete the wings of the jet by constructing an **isosceles** triangle which has a perimeter of 184mm and the vertical height of 45mm.
- b. Complete the drawing.

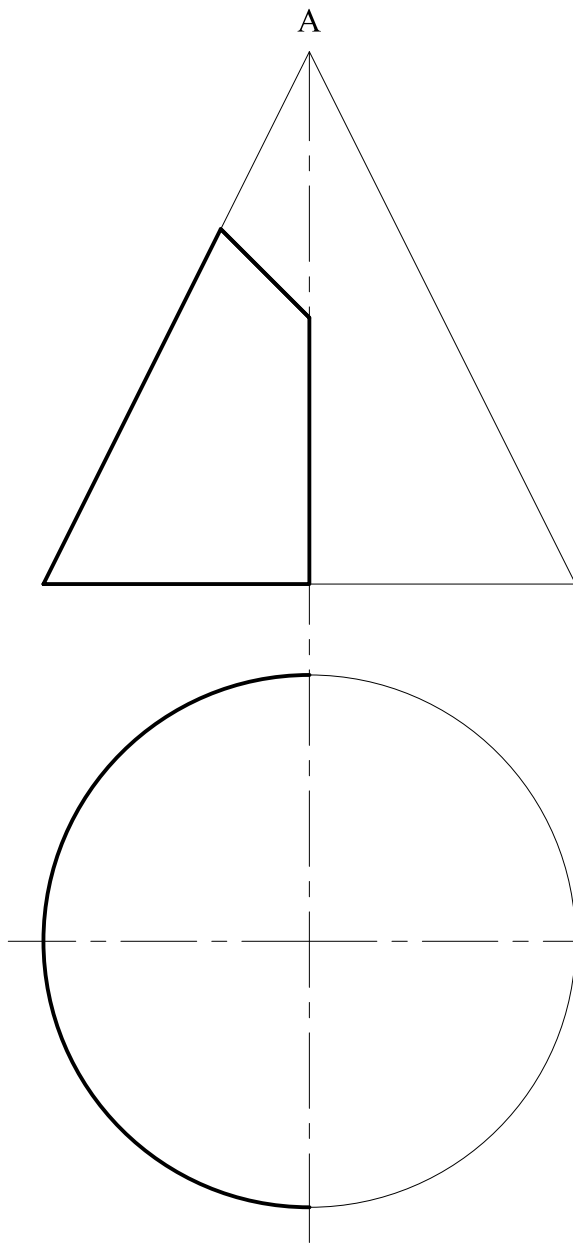
*Note: Leave all construction lines visible.*  
(10 marks)



Question 7. The windshield of a model aeroplane consists of a cut cone. A complete front elevation and an incomplete plan of the truncated cone are given below. In the space provided:

- a. Complete the plan.
- b. Construct the surface development of the windshield.

(14 marks)



Windshield

