



*Leaving Certificate Examination, 2010*

***Design & Communication Graphics***  
***Higher Level***

***Section A (60 marks)***

**Friday, 18 June**

**Afternoon, 2:00 - 5:00**

**This examination is divided into three sections:**

- SECTION A (Core - Short Questions)  
SECTION B (Core - Long Questions)  
SECTION C (Applied Graphics - Long Questions)

- SECTION A**
- Four questions are presented.
  - Answer **any three** on the A3 sheet overleaf.
  - All questions in Section A carry **20 marks** each.

- SECTION B**
- Three questions are presented.
  - Answer **any two** on drawing paper.
  - All questions in Section B carry **45 marks** each.

- SECTION C**
- Five questions are presented.
  - Answer **any two** (i.e. the options you have studied) on drawing paper.
  - All questions in Section C carry **45 marks** each.

**General Instructions:**

- *Construction lines must be shown on all solutions.*
- *Write the question number distinctly on the answer paper in Sections B and C.*
- *Work on one side of the drawing paper only.*
- *All dimensions are given in metres or millimetres.*
- *Write your Examination number in the box below and on all other sheets used.*

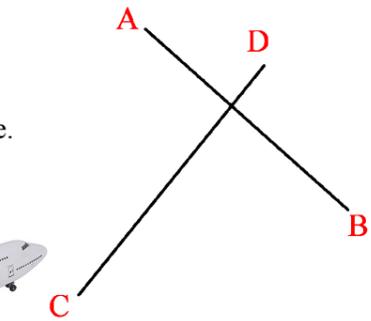
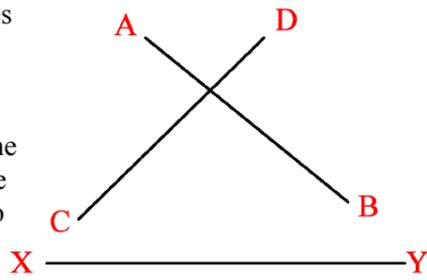
**Examination Number:**

**SECTION A - Core - Answer Any Three of the questions on this A3 sheet**

**A-1.** The flight paths of two aircraft are represented by the two skew lines AB and CD.

(a) Determine the projections of the shortest distance between the two lines.

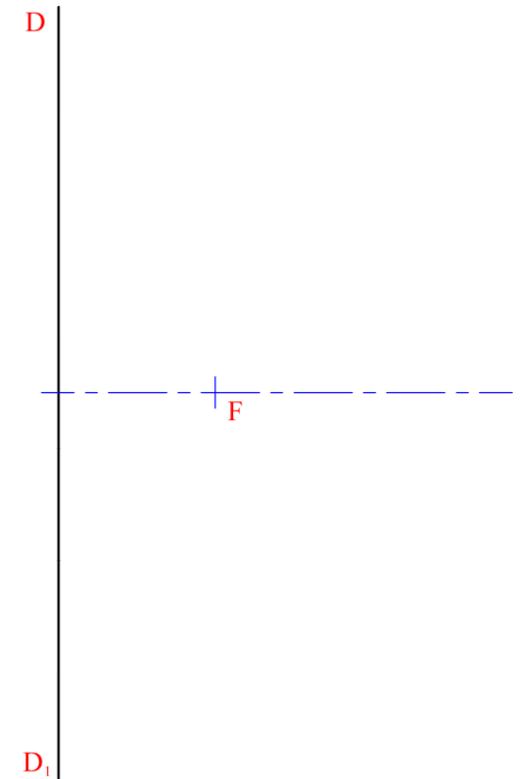
(b) Determine and indicate the length of this shortest distance.



**A-3.** A parabolic curve is often used in the design of racing tracks.

The drawing on the right shows the axis, directrix and focus of a parabola.

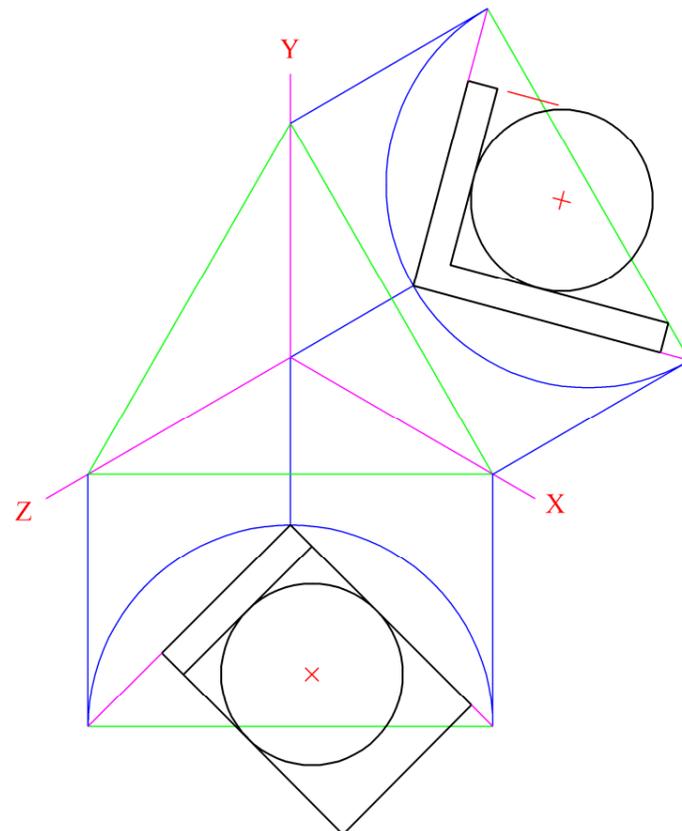
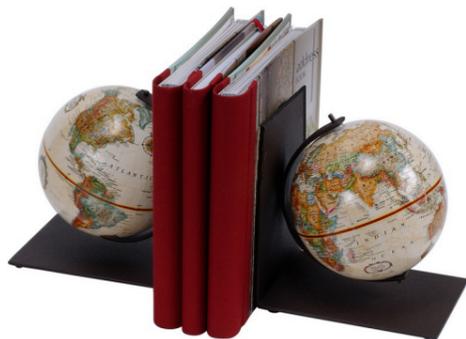
- (a) Locate the vertex and draw a portion of the curve.
- (b) Draw a tangent to the curve at a point 45mm from the focus.



**A-2.** A pair of bookends, each of which incorporates a globe, and some books are shown in the 3D graphic below.

A set of isometric axes is shown on the right and the elevation and plan of a bookend, which incorporates a globe, have been positioned as shown.

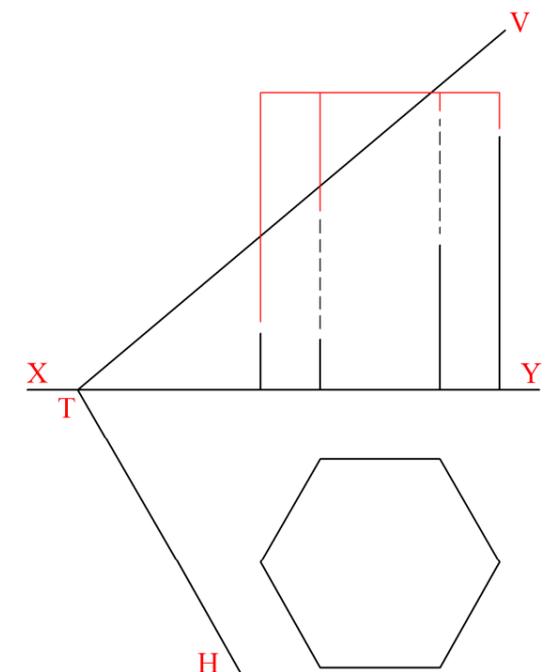
Draw the axonometric projection of the bookend.



**A-4.** The 3D graphic below shows a design of a display box for fruit. The box consists of a regular hexagonal prism which has been cut as shown.

The drawing on the right shows how the prism is cut to form the sloping surface.

- (a) Draw the elevation of the prism when cut by the oblique plane VTH.
- (b) Determine, and indicate in degrees, the inclination of the cut surface to the horizontal plane.



**This Contour Map is part of Section C and should only be used for the answering of the Geologic Geometry Option (Question C-1).**

