



Leaving Certificate Examination, 2018

Design & Communication Graphics Higher Level

Section A (60 marks)

Wednesday, 20 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:

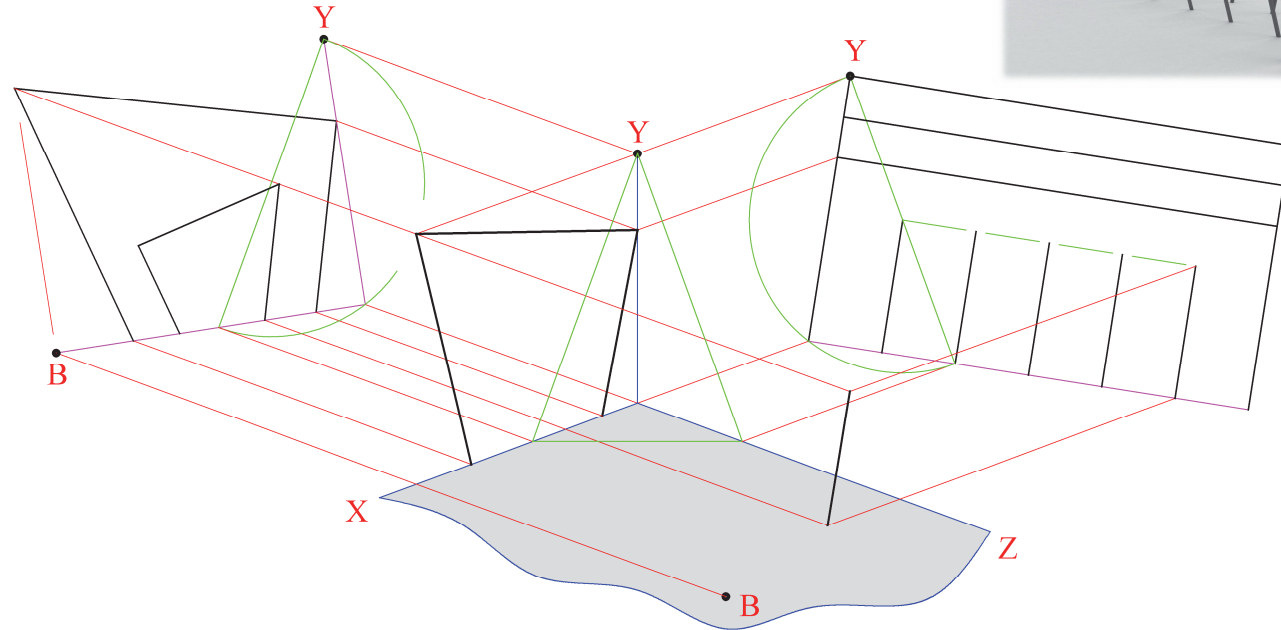
- *Construction lines must be shown on all solutions.*
- *Write the question number distinctly on the answer paper in Sections B and C.*
- *Work on one side of the drawing paper only.*
- *All dimensions are given in metres or millimetres.*
- *Write your Examination number in the box below and on all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

Examination Number:

SECTION A - Core - Answer any three of the questions on this A3 sheet.

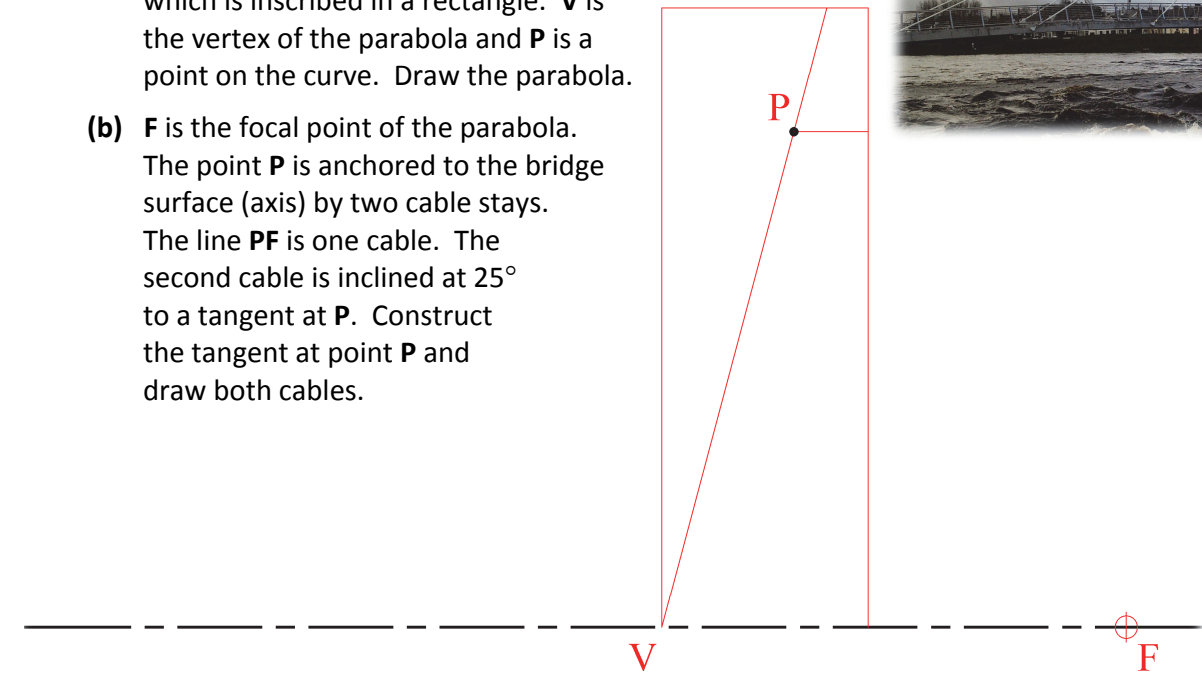
A-1. The 3D graphic shows a bicycle shelter. The drawing shows an incomplete dimetric projection of a similar shelter using the axonometric axes method. The horizontal plane is also included.

- (a) Complete the axonometric projection of the bike shelter.
- (b) A line joining **Y** to **B** represents the straight line path of a football. Show the point of impact of the ball with the glass roof in the axonometric view.



A-3. The image on the right shows the *Salmon Weir Bridge* over the river Moy in Co. Mayo. The drawing below shows an incomplete elevation of the bridge.

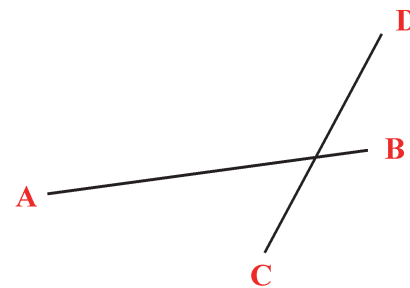
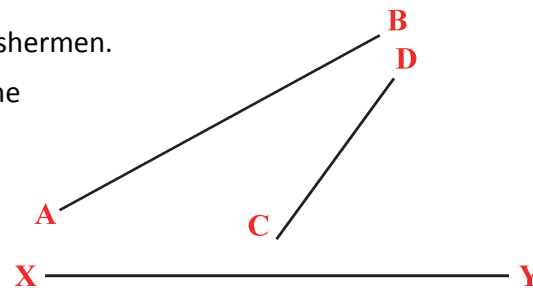
- (a) The curved support pillar is based on a parabola which is inscribed in a rectangle. **V** is the vertex of the parabola and **P** is a point on the curve. Draw the parabola.
- (b) **F** is the focal point of the parabola. The point **P** is anchored to the bridge surface (axis) by two cable stays. The line **PF** is one cable. The second cable is inclined at 25° to a tangent at **P**. Construct the tangent at point **P** and draw both cables.



A-2. The graphic below shows a group of fishermen.

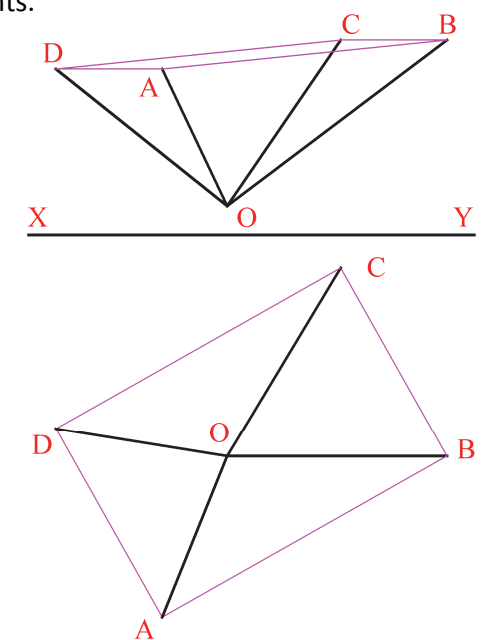
Two fishing rods are represented by the skew lines **AB** and **CD** on the right.

- (a) Determine the projections of the shortest horizontal line between the two skew lines.
- (b) Determine, and indicate the distance from this line to the horizontal plane.



A-4. The graphic shows a *spidercam* used for aerial coverage of sports events. It is supported by four cables. The drawing shows the projections of the cables.

- (a) Find the dihedral angle between the planes **OAB** and **OAD**.
- (b) Determine the angle between the cables **OA** and **OB**.



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

(Scale 1:1000)

35

