



Coimisiún na Scrúduithe Stáit
State Examinations Commission

Leaving Certificate Examination, 2022

Design & Communication Graphics
Higher Level

Section A (60 marks)

Centre No.

Thursday, 23 June
Morning, 9:30 - 12:30

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**
and
SECTION C
- Eight questions are presented.
 - Answer **any two** on drawing paper.
 - All questions in Section B and Section C carry **60 marks** each.

General Instructions:

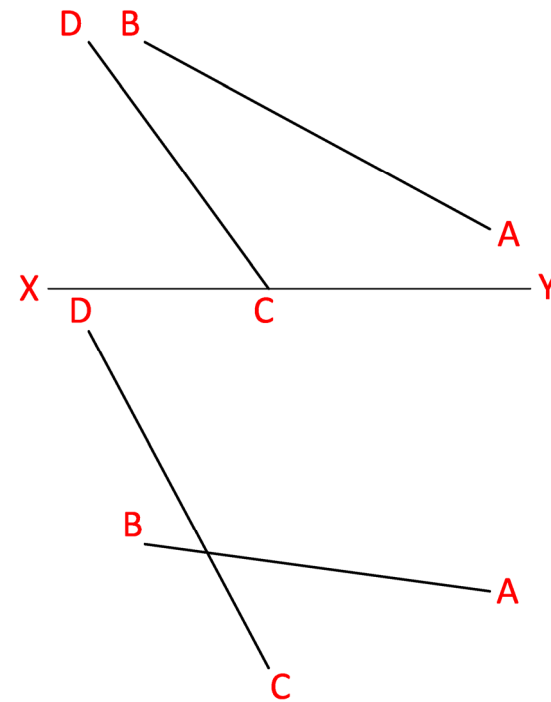
- *Construction lines must be shown on all solutions.*
- *Write the question number distinctly on the answer paper in Sections B and C.*
- *Work on one side of the drawing paper only.*
- *All dimensions are given in metres or millimetres.*
- *Write your Examination number in the box below and on all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

Examination Number

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

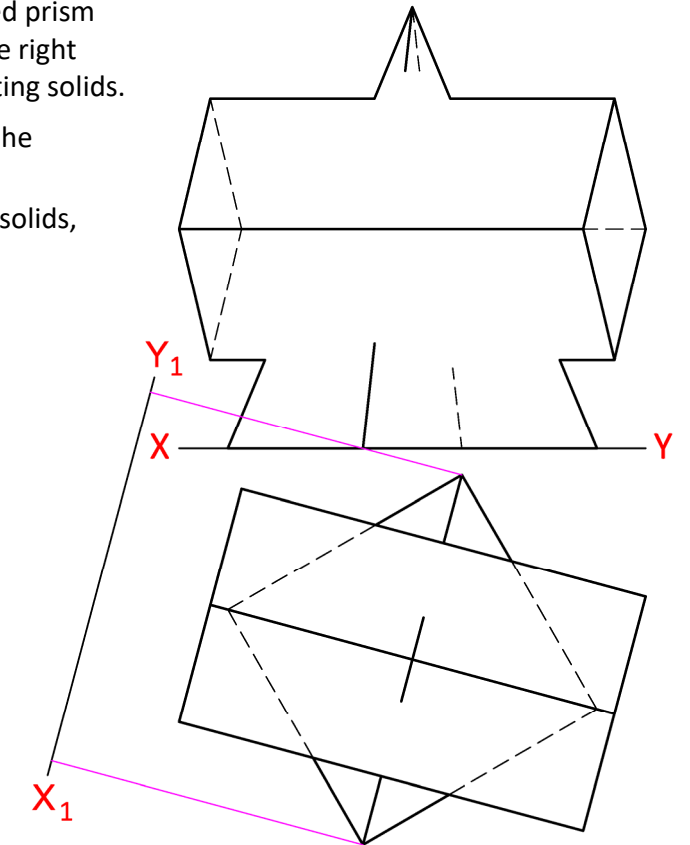
A-1. The image below shows the booms of two cranes. The crane booms are represented by the skew lines **AB** and **CD** on the right.

- (a) Determine the projections of the shortest horizontal line between the skew lines.
- (b) Determine, and indicate in millimetres, the true length of this line.



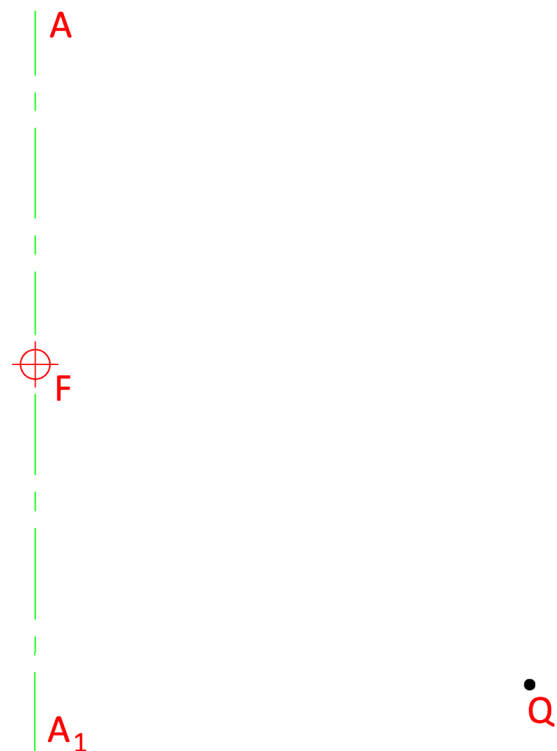
A-3. The image below shows a design based on a square-based prism intersecting a square-based pyramid. The drawing on the right shows the incomplete elevation and plan of the intersecting solids.

- (a) Using the given X_1Y_1 , draw an auxiliary elevation of the intersecting solids.
- (b) Complete the elevation and plan of the intersecting solids, showing all lines of interpenetration.



A-2. The image below shows the parabolic bridge at Mizen Head in Cork. The drawing below shows the axis AA_1 , focus **F**, and two points **P** and **Q** on a similar parabola.

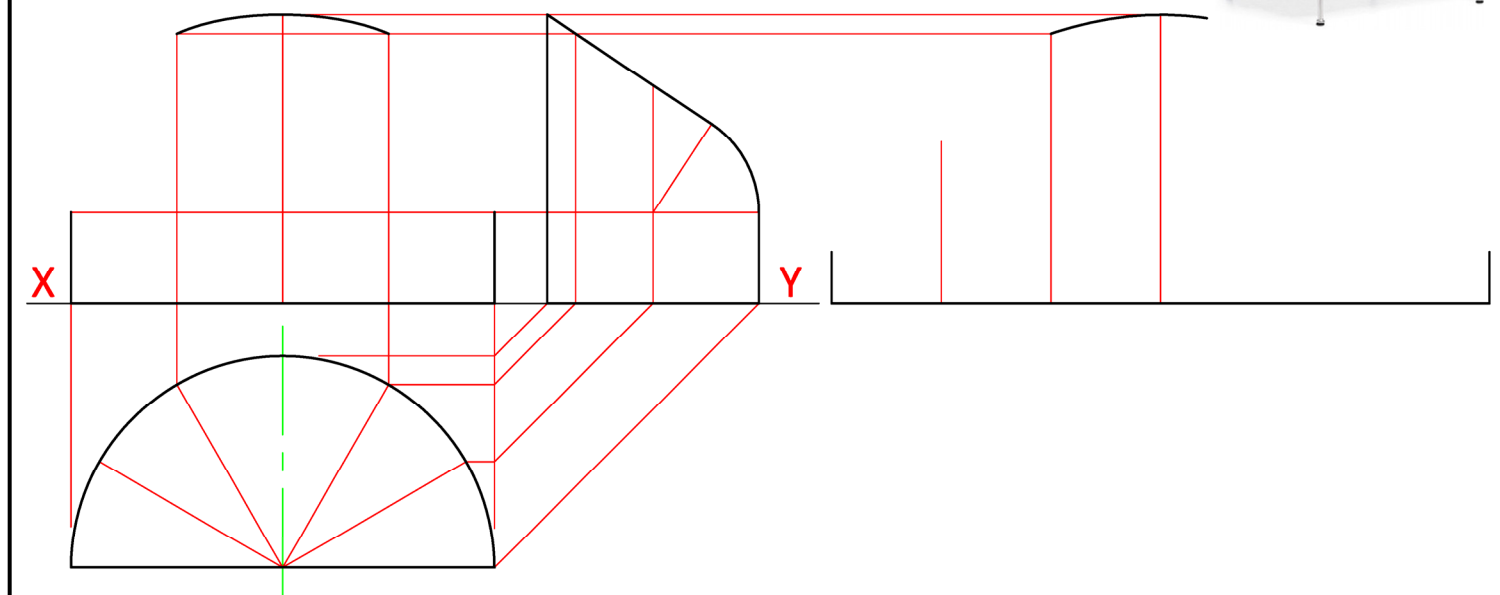
- (a) Locate the directrix and the vertex and draw a portion of the parabola which shall pass through **P** and **Q**.
- (b) Draw a tangent to the curve at point **Q**.



A-4. The image on the right shows a modern chair design. It includes a curved plywood back, based on a cylinder which is truncated and shaped as shown.

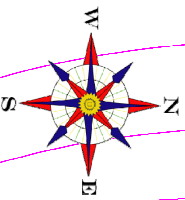
The drawing shows the plan, incomplete elevation and end view of the plywood back of a similar chair. The partially completed surface development of the back has been projected from the end view.

- (a) Complete the elevation.
- (b) Complete the surface development.



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)



50 45 45 50 55 55 60 65

60

45 40 40 45 50 55 60 65

E

F

D

C

B

A

65 60 55 50 50 55 60 65 70 75 80 75 70 65 60 55 50