



2019. M80A

**Coimisiún na Scrúduithe Stáit**  
**State Examinations Commission**

2019L562GAEL

**Leaving Certificate Examination, 2019**

# **Design & Communication Graphics**

## **Ordinary Level**

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

Centre No.

**Thursday, 20 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**

- 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.*

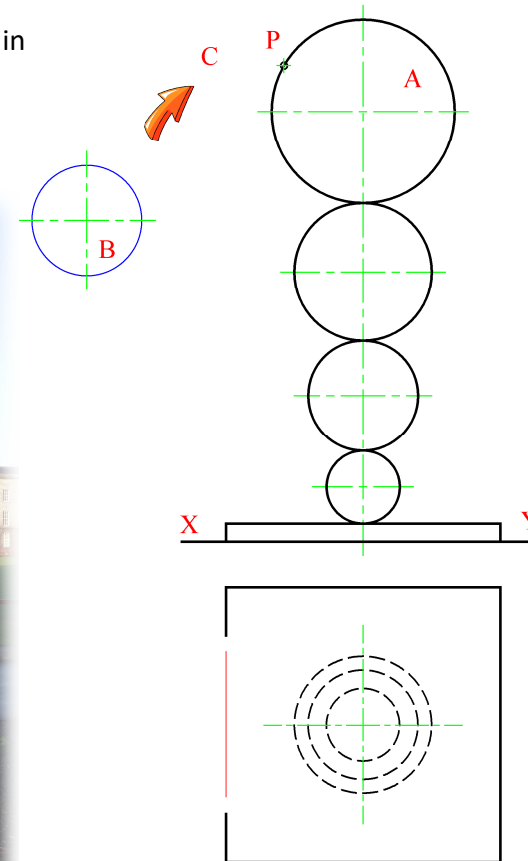
**Examination Number:**

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

**A-1.** The 3D graphic below shows a modern sculpture in the grounds of Trinity College, Dublin. It consists of a series of spheres which are in contact as shown. The entire structure rests on a square base.

The drawing on the right shows the incomplete projections of the three lower spheres, centrally positioned on the square base.

- Draw the plan of sphere **A**.
- Draw the elevation of the sphere **B** when it has been moved into position **C**, as indicated by the arrow, so that it is in contact with sphere **A** at the point **P**.
- Draw the plan of sphere **B** in its new position and complete the drawing of the structure.

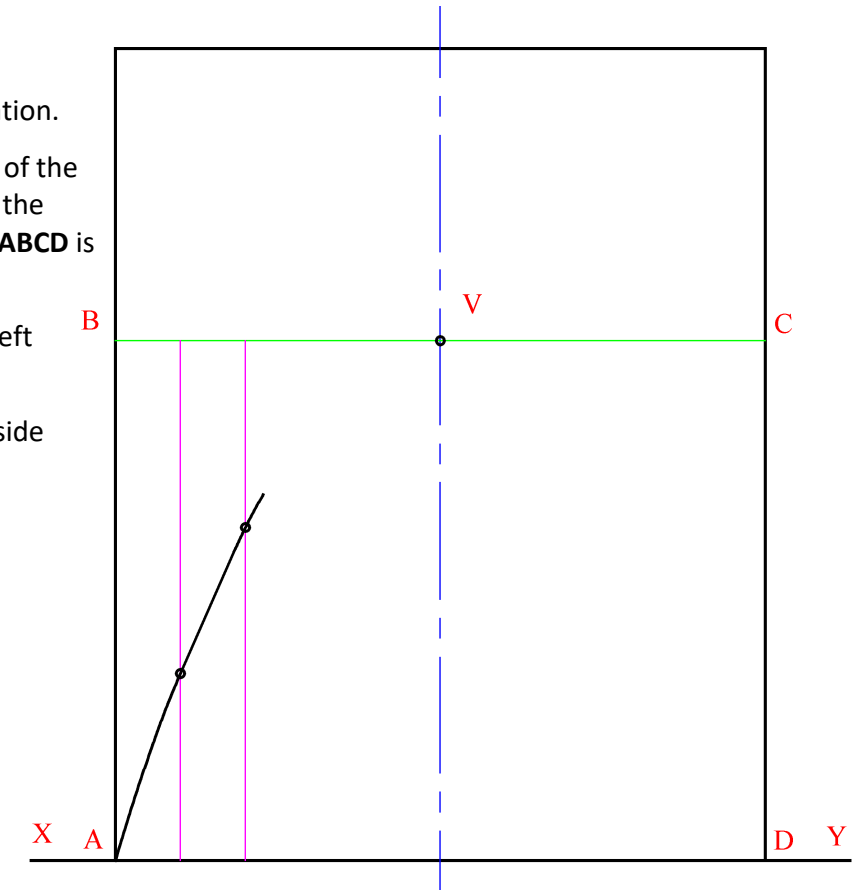


**A-3.** The images below show a cutter which is part of a paper punch.

The cutter appears as a parabola in elevation.

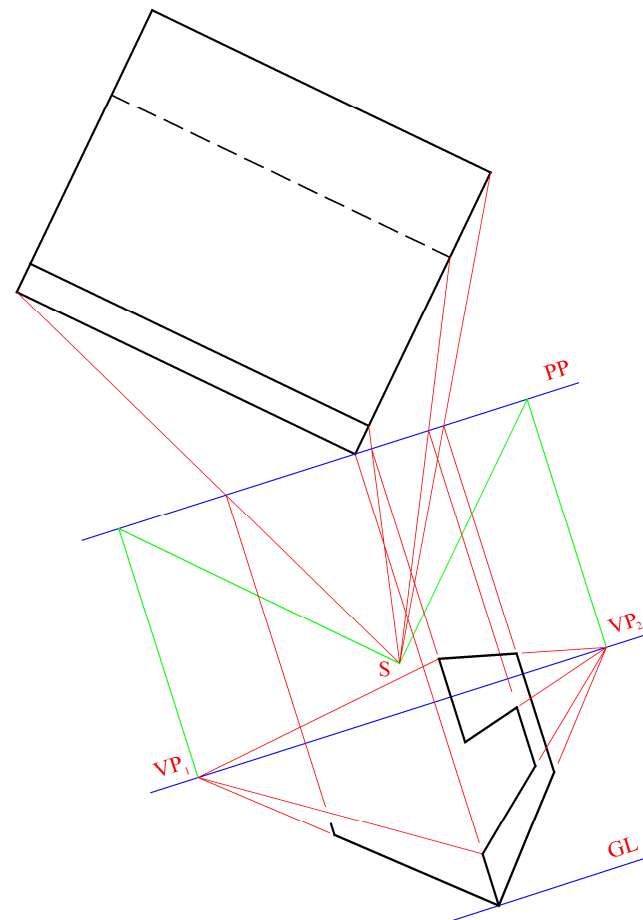
The drawing shows the outline elevation of the cutter. A portion of the left hand side of the parabola, which is inscribed in rectangle **ABCD** is shown. **V** is the vertex of the parabola.

- Locate the remaining points on the left hand side of the parabola.
- Locate the points on the right hand side of the parabola.
- Draw the complete parabola.



**A-2.** The image below shows a coffee machine. The drawing on the right shows the plan and the partially completed perspective view of the main body of a similar coffee machine.

Complete the perspective drawing.

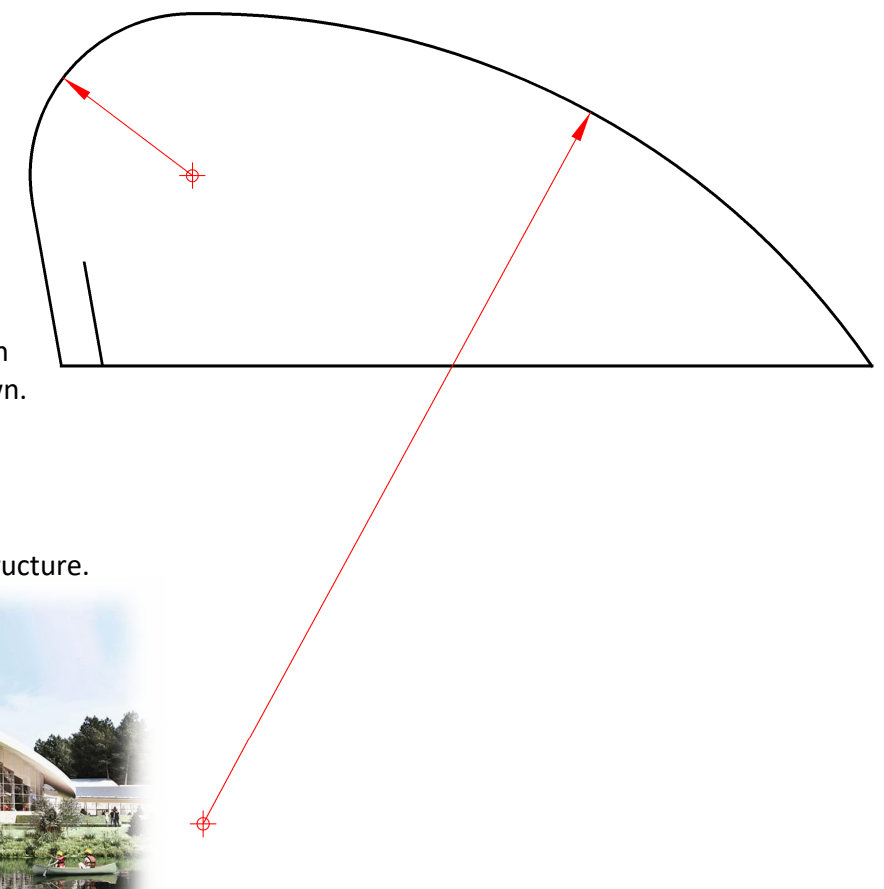


**A-4.** The image below shows an artist's impression of a structure in the 'Centre Parcs' holiday resort, currently under construction in county Longford.

The drawing on the right shows the outline of a similar structure.

The design of the structure is based on lines and tangential arcs. The structure has a uniform thickness. A small portion of the inner parallel surface is also shown.

- Complete the drawing of the **inner surface** of the structure.
- Show the exact points of contact between all arcs and lines in the structure.



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)

