

# AN ROINN OIDEACHAIS

(Department of Education).

## BRAINSE AN MHEAN-OIDEACHAIS.

(Secondary Education Branch).

LEAVING CERTIFICATE EXAMINATION, 1931.

HONOURS.

### MECHANICAL DRAWING AND DESIGN. BOYS AND GIRLS.

TUESDAY, 16th JUNE.—AFTERNOON, 4 TO 6 P.M.

#### BOYS ONLY.

NOTE.—The use of mathematical instruments, protractors, scales, T- and set squares, and drawing-boards is allowed.

All construction lines must be clearly shown.

The number of the question must be distinctly marked by the side of each answer. Both sides of the paper may be used.

Questions marked (\*) have accompanying diagrams.

The number of marks assigned to each question is stated in brackets after the question.

Q. 1. Make a plain scale  $\frac{1}{2}$  full size, to show feet and inches, and to measure 5 feet. Finish and figure the scale neatly and carefully. Draw to this scale a circle of 1' 3" radius, and within the circle draw a rectangle having its corners in the circumference, and its shorter sides 1' 5". [10]

\*Q. 2. Copy the given figure. The straight lines are to form a regular pentagon of  $1\frac{3}{4}$ " sides, and the five equal segments are to have their arcs tangent at the angles of the pentagon. Show all your construction lines clearly. [9]

\*Q. 3. The plan is given of a right cone, of which V is the vertex. Draw an elevation on the given XY, and show the section by a vertical plane parallel to the base and one inch from it. [13]

\*Q. 4. The elevation is given of a solid circular pedestal. The curves at the sides consist of tangential arcs which are quadrants of circles, one twice the radius of the other. On top is a hollow sphere. Draw the plan and sectional elevation made by a plane passing through the centre and parallel to the vertical plane of projection. [12]

\*Q. 5. Draw neatly, with instruments, the framework of the given pattern, making the width of the repeat  $1\frac{1}{2}$  inches, and the other measurements in proportion. Complete four repeats, and show what you consider a unit of the pattern. [9]

Q. 6. Make a design in two colours to fill a circle of 4 inches diameter. The word "OINN" in Irish letters, or the word "PUSH" in Roman letters is to form an important part of the design.

State in what material your design is most suitable for reproduction. [22]

## GIRLS ONLY.

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All construction lines must be clearly shown.

The number of the question must be distinctly marked by the side of each answer. Both sides of the paper may be used.

Questions marked (\*) have accompanying diagrams.

The number of marks assigned to each question is stated in brackets after the question.

\*Q. 1. The elevation is given of a lamp-shade in the form of a truncated cone.

Draw the shape of the piece of material which would accurately fit round the shade. All construction must be clearly indicated. Scale (which need not be drawn) 1" to 1'.

[13]

\*Q. 2. Draw with instruments, the construction necessary in setting out the repeating pattern shown in diagram, use the figured dimensions. Indicate what you consider a unit of repeat.

[10]

\*Q. 3. Draw the given figure which is composed of a circle and tangential arcs of circles. Make the diameter of the circle 4", and show clearly all points of contact and construction.

[10]

\*Q. 4. The given section of a pattern consists of a circle, arcs of circles and tangents.

Draw with instruments, using the figured dimensions, a system of construction lines on which the pattern can be worked. All points of contact must be clearly shown.

[11]

Q. 5. Draw a scale of chords of  $3\frac{3}{4}$ " radius, by which any multiple of  $10^\circ$  can be measured up to  $90^\circ$ . By means of this scale construct a triangle, base 4", angles at base  $70^\circ$  and  $30^\circ$ .

[9]

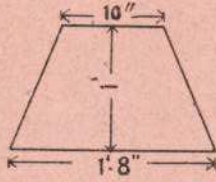
Q. 6. Make a design in two colours suitable for reproduction in embroidery, stencilling or any other suitable medium.

Your design to be triangular in shape, and not less than 6" base or side. Celtic or floral ornament may be used and the word  $\Delta M \Delta C$  in Irish letters or, the word EXIT in Roman letters, is to form an important part of the design.

[22]

GIRLS ONLY.

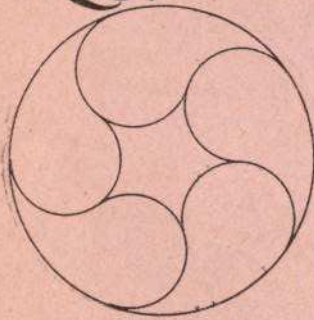
Q1.



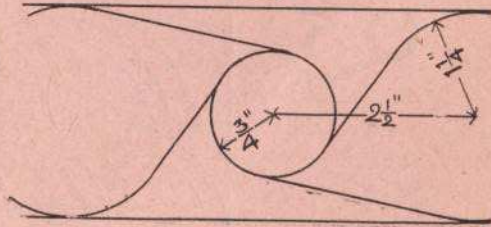
Q2.



Q3.

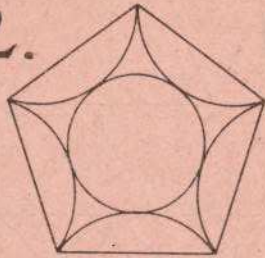


Q4.

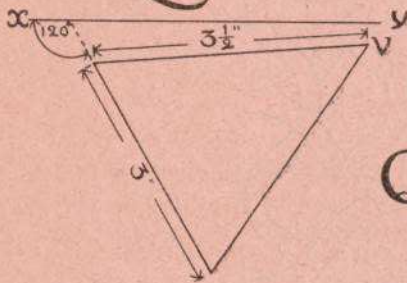


BOYS ONLY.

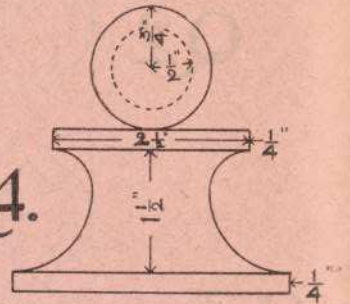
Q2.



Q3.



Q4.



Q5.

