AN ROINN OIDEACHAIS
(Department of Education).

INTERMEDIATE CERTIFICATE EXAMINATION, 1955.

MATHEMATICS (Arithmetic).

TUESDAY, 7th JUNE.—Morning, 10 to 12.

All questions to be answered.

Mathematical Tables may be obtained from the Superintendent.

1. Find the cost of 8 tons 15 cwt. at £17 6s. 8d. per ton.
   If 2½% discount is allowed for cash, find the cash price.
   [25 marks.]

2. (a) Simplify: \( \frac{3\frac{3}{4} - 2\frac{1}{4}}{1\frac{1}{2} \times 4\frac{1}{2}} \).

   (b) Evaluate \((0.289)^2\), correct to two significant figures.
   [25 marks.]

3. Find, correct to the nearest penny, the compound interest on
   £580 for three years at 4½% per annum.
   [30 marks.]

4. The scale of a map is 25 inches to the mile. A certain field is
   represented on the map by a rectangle 1·8 inches by 1·3 inches. Find
   (a) the length and breadth of the field, in yards correct to the nearest
   yard, (b) the area of the field in acres, correct to two significant figures.
   (See Tables, p. 33.)
   [30 marks.]

5. (a) A car which cost £450 was sold at a profit of 18½%. Find the
   selling price.

   (b) An article was sold for £124 17s. 6d. at a loss of 7½%. Find
   the cost price.

   (c) When the price of tea was increased by 15%, a person reduced
   his consumption by 10%. By what percentage was his expenditure on tea altered by these changes?
   [30 marks.]
6. Two motorists, A and B, travel on a journey of 70 miles, A travelling at 30 miles per hour and B at 50 miles per hour. A begins the journey at 3 p.m. and B sets out at 3.30 p.m. from the same starting point. Find, graphically or otherwise,

(i) the time at which B overtakes A,

(ii) the times at which A and B are four miles apart,

(iii) how many miles A has still to travel when B has completed the journey.

[30 marks.]

7. A solid cylinder is 5 inches in diameter and 9 inches high. Find (a) the volume of the cylinder in cubic inches, correct to the nearest cubic inch, (b) the total surface area of the cylinder in square inches, correct to the nearest square inch.

A cube has the same volume as this cylinder. Find the length of the edge of the cube in inches, correct to two significant figures.

[30 marks.]