

AN ROINN OIDEACHAIS
(Department of Education).

BRAINNSE AN MHEADHON-OIDEACHAIS
(Secondary Education Branch).

INTERMEDIATE CERTIFICATE EXAMINATION, 1936.

ELEMENTARY MATHEMATICS (Algebra).
FOR GIRLS ONLY.

MONDAY, 22nd JUNE.—AFTERNOON, 3.30 P.M. TO 6 P.M.

Seven questions may be answered.

Mathematical Tables may be obtained from the Superintendent.

1. Solve the equations

(i) $4\frac{1}{2}(x+2)=3(2x-1)$;

(ii) $\frac{b+ax}{a} - \frac{a-bx}{b} = \frac{a^2+b^2}{ab}$.

[20 marks.]

2. Factorise

(i) a^2x-ax^2 ;

(ii) $x^2+ax-ab-bx$;

(iii) $x^2-13x-90$;

(iv) $x^2-y^2-2yz-z^2$.

[20 marks.]

3. Find the value of

$4x^2-x$ when $x=\frac{3}{4}$.

Solve the equation

$4x^2-x=1\frac{1}{2}$.

[20 marks.]

4. A rectangular garden is twice as long as it is broad. Round the inside edge of the garden runs a path three feet wide. If the area of the path is 864 square feet, find the length and the breadth of the garden.

[20 marks.]

5. Solve, to two places of decimals, the equation
 $x^2 - 8x - 17 = 0$.

[22 marks.]

6. Find the common factor of

$$6x^2 + 5x - 4 \text{ and } 4x^3 - 3x + 1.$$

[22 marks.]

7. Find the values of $x^2 - x$ when $x = -2, -1, 0, 1, 2$ respectively.

Use these values to draw the graph of $y = x^2 - x$.

Use the graph to solve the equation $x^2 - x = 1$.

[22 marks.]

8. A girl was sent for a dozen eggs. On her way home she broke one of them and as a consequence the eggs become twopence per dozen dearer. What was the price per dozen?

[22 marks.]

9. When $a^2 + a = 2$, prove that *either* $a^2 + 2a = 3$ *or* $a^2 - 3a = 10$.

[22 marks.]