

AN ROINN OIDEACHAIS  
(Department of Education).

BRAINNSE AN MHEADHON-OIDEACHAIS  
(Secondary Education Branch).

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INTERMEDIATE CERTIFICATE EXAMINATION, 1937

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ELEMENTARY MATHEMATICS (Algebra).  
FOR GIRLS ONLY.

MONDAY, 21st JUNE.—AFTERNOON, 3.30 P.M. TO 6 P.M.

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Seven questions may be answered.

Mathematical Tables may be obtained from the Superintendent.

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1. Solve the equations :

(i)  $\frac{2x+5}{3-x} = \frac{3}{4}$ ;

(ii)  $3x-y=2,$   
 $5x=4y.$

[20 marks.]

2. Factorise :

(i)  $a(x-y)+b(y-x)$ ;

(ii)  $24x^2-10x-1$ ;

(iii)  $a(a-b)+(b-1)$ ;

(iv)  $a^3-8b^3.$

[20 marks.]

3. Use the formula

$$L = \frac{Wh}{d(W+P)}$$

to find the value of  $W$  when  $L = \frac{1}{5}, h = 4, d = 1\frac{1}{2}, P = 14.$

[20 marks.]

4. One kind of tea is 6d. per lb. cheaper than another. When 10 lbs. of the former are mixed with 2 lbs. of the latter the mixture is worth 2s. 3d. per lb. What is the price of the cheaper kind ?

[20 marks.]

5. Solve, to 2 decimal places, the equation  $2x^2 - 6x = 5$ .

[22 marks.]

6. The volume of a room is  $V$  cubic feet. The length is  $l$  feet and the breadth is  $b$  feet. Express the height and the area of the 4 walls in terms of  $V$ ,  $l$ ,  $b$ .

[22 marks.]

7. If  $x$  is an integer write down the next consecutive integer to  $x$ . Given that  $a$ ,  $b$ ,  $c$  are three consecutive integers, prove that  $a^2 + c^2 - 2b^2 = 2$ .

[22 marks.]

8. Draw the graph of  $y = \frac{1}{4}x(5-x)$  from  $x=0$  to  $x=5$  and use it to find, as accurately as you can, the values of  $x$  when  $y = 1\frac{1}{4}$ .

[22 marks.]

9. If a train travelled at 45 miles per hour it would arrive at the end of a certain journey half-an-hour late, and if it travelled at 60 miles per hour it would arrive half-an-hour early. Find the length of the journey.

[22 marks.]