

AN ROINN OIDEACHAIS

(Department of Education).

INTERMEDIATE CERTIFICATE EXAMINATION, 1958.

ELEMENTARY MATHEMATICS (Algebra).

FOR GIRLS ONLY.

MONDAY, 16th JUNE.—MORNING 10 TO 12.

All questions to be answered.

All questions carry equal marks.

1. Solve $\frac{x+2}{3} - \frac{4x-1}{4} + \frac{5}{12} = \frac{2}{3}(1-3x)$, and verify your solution.
2. Factorize the following expressions: $-2x^2-x$; $2x^2+5x-3$; $8x^2-1$, and find (i) their highest common factor, (ii) their lowest common multiple.
3. (a) Solve the simultaneous equations:—
$$\begin{aligned}4x-3y &= 28; \\5x-7y &= -4.\end{aligned}$$
(b) If $x+2y=a$ and $x-3y=b$, show that $\frac{5y}{2x-y} = \frac{a-b}{a+b}$.
4. Find from the equation $2S=n\{2a+(n-1)d\}$
 - (i) the value of S when $a=39$, $n=20$, $d=-5$;
 - (ii) the values of n when $a=5$, $d=-1$, $S=14$.
5. Including junior and senior pupils, the number of girls in a school is 300. All of the juniors except ten and all of the seniors except five go on an excursion, the juniors paying 12s. each and the seniors 24s. each. If the total cost of the excursion is £252, find the number of junior pupils in the school.
6. Find the values of the expression $3+x-2x^2$ when $x=2$, 1 , $\frac{1}{2}$, 0 , $-\frac{1}{2}$, $-1\frac{1}{2}$. Using these values draw a graph of the expression and find from the graph (i) the values of x for which the expression is equal to 1, (ii) the value of the expression when $x=\frac{1}{4}$.