AN ROINN OIDEACHAIS
(Department of Education)

INTERMEDIATE CERTIFICATE EXAMINATION, 1960.

ELEMENTARY MATHEMATICS (Algebra).
FOR GIRLS ONLY.

TUESDAY, 14th JUNE.—Morning, 10 to 12.

All questions to be answered.
All questions carry equal marks.

1. Simplify:
   (i) \((a-b)^2-a(a-2b)\),
   (ii) \(\frac{2x}{3} + \frac{4x-5}{5} - \frac{10}{10}\).

2. Solve the equations:
   (i) \(3x(x-2)-2(x+3)(x-3)=(x-4)^2\),
   (ii) \(\frac{3}{2x} - \frac{5}{3x} = 1\).

Verify your solutions.

3. (a) Factorize:
   (i) \(3x^2+ab-2b^2\),
   (ii) \(5x^2-20xyz\).

(b) Find the quotient when the product of \(x^2-4x+3\) and \(2x^2+3x+2\) is divided by \(2x^2-7x+3\).

4. (a) Find the values of \(x\) and \(y\) which satisfy the simultaneous equations:
   \[3x-6y=17,\]
   \[2x+y=3.\]

(b) A girl, who cycles at a speed of 12 miles per hour and walks at a speed of 3 miles per hour, cycles from A to B and then walks from B to C, the whole journey from A to C taking 30 minutes. If she had walked from A to B and cycled from B to C, she would have done the whole journey in 45 minutes. Find the distance from A to B and from B to C.

5. If \(s=t(u+f/f)\), find (i) the value of \(u\) when \(s=100, t=10, f=-2\),
   (ii) the values of \(t\) when \(s=3, u=4\) and \(f=-2\).

6. Calculate the values of \(x^2-2x-2\) when
   \(x=-1, -\frac{1}{2}, 0, \frac{1}{2}, 1, 1\frac{1}{2}, 2, 2\frac{1}{2}, 3\),
   and use these values to draw a graph of \(x^2-2x-2\).

Find from the graph (i) the value of \(x^2-2x-2\) when \(x=2.9\), (ii) the roots of the equation \(x^2-2x-2=0\).

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