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(Department of Education).

INTERMEDIATE CERTIFICATE EXAMINATION, 1951.

ELEMENTARY MATHEMATICS (Algebra).

FOR GIRLS ONLY.

TUESDAY, 12th JUNE.—MORNING, 10 TO 12.

Six questions may be answered.

All questions carry equal marks.

1. Find the value of $\frac{3x^2-3x-6}{x^3-x} + \frac{x+6}{x^3-x}$ (i) when $x=4$, and (ii) when $x=-4$.

2. Solve the equations:

   (i) $5(x-1)-3(2-3x)=10x-1$;

   (ii) $\left.\begin{aligned} 3x+2y&=7 \\ 2x-3y&=9 \end{aligned}\right\}$.

3. Factorise:

   (i) $2x^2-10x-12$;

   (ii) $ac-9bd-3ad+3bc$;

   (iii) $(2a-b)^2-(a-2b)^2$.

4. A girl has x shillings. How much in shillings will she have left

   (*a*) if she spends y pence,

   (*b*) if she spends z pounds,

   (*c*) if she divides the x shillings equally between herself and n others?

What percentage of the x shillings will she have left in (*a*)?

Or,

4. A girl spent £2 10s. in buying tea and butter. She bought x lb. of tea at 5s. 6d. per lb. and y lb. of butter at 3s. 6d. per lb. If the tea had cost 2s. 8d. per lb. and the butter 2s. 8d. per lb. also, she would have saved 18s. How many lb. of tea and how many lb. of butter did she buy?

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5. Find, correct to two decimal places, the values of x which satisfy the equation $x^2-3x=6$.

Or,

5. If a cyclist were to increase his speed by 2 miles per hour he would save one hour on a journey of 40 miles. Find his speed.

6. Using the same axes and the same scales draw the graphs of x^2 and $x+1$ from $x=-3$ to $x=+3$.

Find from your graphs, as accurately as you can, the values of x for which x^2 is equal to $x+1$.