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(Department of Education).

INTERMEDIATE CERTIFICATE EXAMINATION, 1948.

ELEMENTARY MATHEMATICS (Algebra).

FOR GIRLS ONLY.

MONDAY, 21st JUNE.—MORNING, 10 TO 12.

Six questions may be answered.

All questions carry equal marks.

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1. Multiply $x^2-3x-10$ by $x+7$.
Find the value of the product when $x=-6$.

2. Solve the equations

(*a*) $7(x-4)-4(2x-7)=3(10-x)-2(x+17)$;

(*b*) $\frac{2}{3}(x-2)-\frac{1}{5}(2x-5)=1-\frac{4x-1}{10}$.

3. I walk at $3\frac{1}{2}$ miles per hour from my home to a bicycle shop, wait 20 minutes while my bicycle is being mended, ride back at $10\frac{1}{2}$ miles per hour and arrive home one hour after I had left. How far is the bicycle shop from my home?

4. Factorise

(ii) $24x^2-17x+3$;

(ii) $4a^2-(b-3c)^2$;

(iii) $abx^2-(a^2-b^2)x-ab$.

5. Solve the simultaneous equations

$$x+y=a+b,$$

$$ax-by=a+b.$$

6. Find, correct to 2 decimal places, the values of x which satisfy the equation $x^2-7x=5$.

7. When the price of beef is raised by 6d. per lb. you get 2 lb. less for £1 than you previously did. What did the beef originally cost per lb. ?

8. Find the values of $2x^2+3x-1$ when $x=-2, -1\frac{1}{2}, -1, -\frac{1}{2}, 0, \frac{1}{2}, 1$ respectively and draw the graph of $y=2x^2+3x-1$.

Use your graph to find as accurately as you can the roots of the equation $2x^2+3x-1=0$.

Or

C and F, representing temperature in degrees Centigrade and Fahrenheit respectively, are connected by the equation $C=\frac{5}{9}(F-32)$. Express F in terms of C.

If water (i) freezes at 0° Centigrade and (ii) boils at 100° Centigrade, find the freezing and boiling points of water in degrees Fahrenheit ?

At what temperature are C and F equal ?