AN ROINN OIDEACHAIS

(Department of Education).

INTERMEDIATE CERTIFICATE EXAMINATION, 1954.

ELEMENTARY MATHEMATICS (Algebra).

FOR GIRLS ONLY.

TUESDAY, 15th JUNE.—MORNING, 10 TO 12.

All questions to be answered.

All questions carry equal marks.

---

1. Solve the equations :—

   (*a*) $3(6x+5)-4(3x+4)=7(3+2x)-14$;

   (*b*) $2x+5y=14$,
   $7x+6y=3$.

2. Divide $2x^3-11x^2+18x-9$ by $2x-3$. Test your answer when $x=4$ and, also, when $x=-1$.

3 Factorise :—

   (*a*) x^2+x-42 ;

   (*b*) $9a^2-(b+c)^2$;

   (*c*) $2a^2-ab+5bc-10ca$.

4. Solve each of the following equations :—

   (*a*) $x^2=25$;

   (*b*) $(x-3)^2=121$;

   (*c*) $x^2-6x=216$.

5. A girl cycles at x miles per hour and walks at y miles per hour. If she cycles for 2 hours and walks the rest of the way, her total time for a journey of 26 miles is $2\frac{1}{2}$ hours. If she walks for 2 hours and cycles the rest of the way, she takes $3\frac{1}{2}$ hours to cover the 26 miles. Find the values of x and y.

6. Using the same axes and the same scales, draw the graphs $y=\frac{1}{2}x^2$ and $y=x+1$ for values of x from $x=-3$ to $x=+3$.
Find from your graphs, as accurately as you can, the values of x for which $x^2=2x+2$.