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INTERMEDIATE CERTIFICATE EXAMINATION, 1933.

ELEMENTARY MATHEMATICS (Algebra).
FOR GIRLS ONLY.

TUESDAY, 20*th JUNE*.—AFTERNOON, 3.30 P.M. TO 6 P.M.

Seven questions may be answered.

All questions carry equal marks.

Mathematical Tables may be obtained from the Superintendent.

1. (*a*) Multiply $5a^2-3ab+2b^2$ by $2a-3b$.

   (*b*) By how much does $9x^3-2x^2-7x+4$ exceed $9x^3-2x^2+11x-2$ when $x=-\frac{1}{9}$?

2. Solve the equations :
    (i) $3x-4(5-6x)=17$;
    (ii) $12x+y=-1$
        $3x-2y=5$.

3. Factorise :
    (i) $2ab-2a-b+1$;
    (ii) $2(x+1)(x+2)+(x+6)(x-2)$.

4. Express in words the meaning of (i) $3x+5$; (ii) $a-(b+c)$; (iii) $(l+m)\ (l-m)=l^2-m^2$.

   Express by means of symbols :
    (i) Four times a number exceeds another number by 3 ;
    (ii) the amount by which the product of two numbers exceeds their sum.
    (iii) £p per ton in pence per lb.

5. Solve the equations :
    (i) $3x^2-16x-12=0$;
    (ii) $3(x-4)^2-16(x-4)-12=0$.

6. A had 29 shillings more than B. If he gave B 4 shillings, A would have twice as much as B. Find what each of them had.

7. Prove that $x^2 - kx + 1$ is a factor of $3x^5 - 5x^3 + k$ when $k = 2$ and when $k = -2$.

8. What is an odd number ?

Given that $2x - 1$ is an odd number write down the next consecutive odd number.

The sum of the squares of two consecutive odd numbers is 202 : find the numbers.

9. A merchant mixed m cwt. of tea costing a shillings per cwt. with n cwt. costing b shillings per cwt. He sold the mixture at c shillings per lb. Write down expressions to represent :

   (i) the total cost price in shillings of the mixture ;

   (ii) the selling price in shillings per *cwt.* ;

   (iii) the total selling price in shillings ;

   (iv) his profit in shillings ;

   (v) his percentage profit.