MATHS

BOOKS - SWAN PUBLICATION

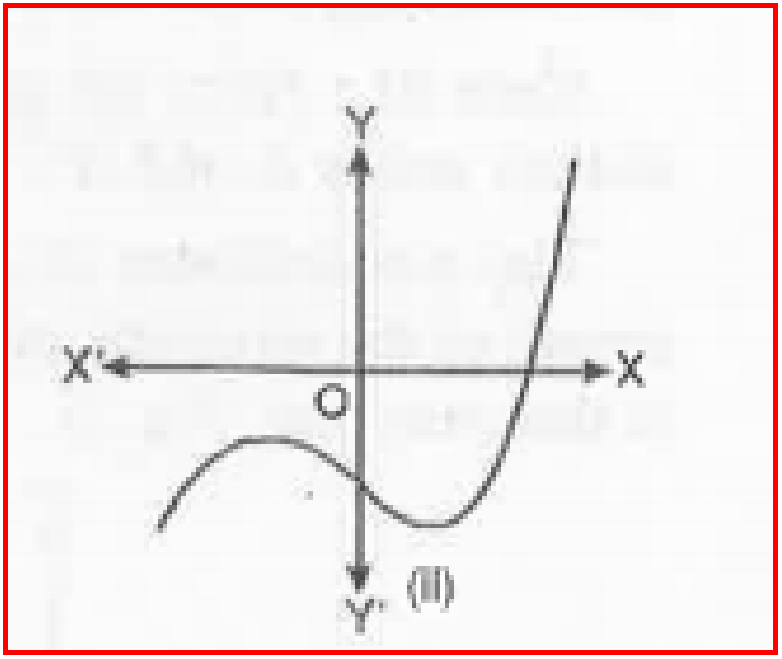
POLYNOMIALS

Exercise 2 1

1. The graphs of y - p (x) are given in Fig. below,

for some polynomials p(x). Find the number of

zeroes of p (x), in each case.



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Exercise 2 2

1. Find the zeroes of the following quadratic polynomials and verify the relationship between the zeroes and the coefficients. : $x^2 - 3$.

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2. Find a quadratic polynomial each with the given numbers as the sum and product of its zeroes respectively. : 1,1

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Exercise 2 3

1. Apply the division algorithm to find the quotient and remainder on dividing p (x) by g (x) as given below :

$p(x) = x^3 - 3x^2 + 5x - 3, g(x) = x^2 - 2\,.$

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2. Check whether the first polynomial is a factor of the second polynomial by applying

the division algorithm :

$t^2 - 3, 2t^4 + 3t^3 - 2t^2 - 9t - 12$.

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3. Obtain all other zeroes of $3x^4 + 6x^3 - 2x^2 - 10x - 5$ if two of its zeroes are $\sqrt{\frac{5}{3}}$ and $-\sqrt{\frac{5}{3}}$.

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4. On dividing $x^3 - 3x^2 + x + 2$ by a polynomial g (x), the quotient and remainder were x - 2 and - 2x + 4 respectively find g (x).

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5. Give examples of polynomials p (x), g (x), q (x) and r (x), which satisfy the division algorithm and : deg p (x) = deg q (x) .

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Exercise 2 4 Optional

1. Verify that the number given alongside of the cubic polynomials below are their zeroes. Also verify the relationship between the zeroes . and the coefficients in each case : $x^3 + 4x^2 + 5x - 2, 2, 1, 1$.

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2. If the zeroes of the polynomial $x^3 - 3x^2 + x + 1$ are a -b , a, a + b, find a and

b .

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3. If two zeroes of the polynomial $x^4 - 6x^3 - 26x^2 + 138x - 35$ are $2 \pm \sqrt{3}$, find other zeroes.

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4. Find a cubic polynomial with the sum, sum of the product of its zeroes taken two at a

time, and the product of its zeroes as 2, - 7, - 14 respectively.

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5. If the polynomial $x^4 - 6x^3 + 16x^2 - 25x + 10$ is divided by another polynomial $x^2 - 2x + k$, the remainder comes out to, be x + a, find k and a.

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