

OUR OWN HIGH SCHOOL, AL WARQA'A, DUBAI

GRADE: X POLYNOMIALS

ASSIGNMENT - 1

1. Find the zero of the polynomials and verify the relation between zeros of a polynomial and its coefficients:
(a) $4x^2 + 11x - 20$ (b) $5x^2 - 32x + 12$ (c) $4\sqrt{3}x^2 + 5x - 2\sqrt{3}$ (d) $6x^2 - 3 - 7x$
2. Find the polynomial whose zeros are given as: (a) $\frac{2}{3}, -\frac{3}{4}$ (b) $4\sqrt{3}, -3\sqrt{3}$
3. Find the quadratic polynomial with the given numbers as sum and product of its zeros respectively: (a) $3, -5$ (b) $\sqrt{2}, 3\sqrt{2}$ (c) $2, -15$
4. For what value of k is the polynomial $2x^3 - kx^2 + 5x + 9$ exactly divisible by $(x + 2)$.
5. If 2 is one zero of the polynomial $a^3 - 3a^2 - 10a + 24$, find the other zeros.
6. If 1 and -2 are two zeros of the polynomial $a^4 + 2a^3 - 13a^2 - 14a + 24$, find the other zeros of the polynomial.

ASSIGNMENT - 2

1. One zero of the polynomial $2x^2 - 8x - m$ is $5/2$. Find the other zero and the value of m .
2. If the zeros of the polynomial $f(x) = 2x^3 - 15x^2 + 37x - 30$ are in AP, find them.
3. Divide $6x^2 - 31x + 47$ by $2x - 5$ and verify the division algorithm.
4. Find all zeros of the polynomial $f(x) = 6x^4 - 10x^3 - 13x^2 + 15x + 6$, if its two zeros are $-\sqrt{\frac{3}{2}}$ and $\sqrt{\frac{3}{2}}$
5. When the polynomial $f(x) = x^3 + x^2 + x - 2$ is divided by a polynomial $g(x)$, the quotient is $x^2 + 2x + 1$ and the remainder is $2x - 1$, find $g(x)$.

ASSIGNMENT - 3

1. Form a quadratic polynomial, one of whose zero is $2 + \sqrt{5}$ and sum of the zeros is 4.
2. α and β are zeros of the quadratic polynomial $x^2 - (k + 6)x + 2(2k - 1)$. Find the value of k , if $2(\alpha + \beta) = \alpha\beta$.
3. If α and $\frac{1}{\alpha}$ are zeros of the polynomial $4x^2 - 2x + (k - 4)$, find k .
4. α and β are zeros of the quadratic polynomial $3x^2 - 4x - 5$, find the values of :
(i) $\alpha^{-1} + \beta^{-1}$ (ii) $\alpha^2 + \beta^2$
5. α and β are zeros of the quadratic polynomial $kx^2 + 4x + 4$, find the value of k , if $\alpha^2 + \beta^2 = 24$.
6. If the polynomial $6x^4 - 9x^3 - 2x^2 + ax - b$ is exactly divisible by the polynomial $3x^2 - 4$, then find the values of a and b .
