

Class: X Mathematics Assignment: 2 April 2010 Chapter: POLYNOMIALS

- Find the zeroes of the following quadratic polynomials and verify the relationships between the zeroes and the coefficients of the polynomials:- (a): $p(x) = 8x^2 - 19x - 15$; (b): $q(x) = 4\sqrt{3}x^2 + 5x - 2\sqrt{3}$; (c): $f(x) = 5x - 4\sqrt{3} + 2\sqrt{3}x^2$.
- Find a quadratic polynomial each with the given numbers as the sum and product of its zeroes respectively:-
 (i) $\frac{2}{3}, -4$ (ii) $-\frac{1}{\sqrt{2}}, \frac{1}{\sqrt{2}}$ (iii) $\sqrt{5}, -2$ (iv) $-\frac{1}{\sqrt{2}}, \frac{2}{3}$
- Verify that 3, -1 and $-\frac{1}{3}$ are zeroes of the polynomial $p(x) = 3x^3 - 5x^2 - 11x - 3$. Then, verify the relationships between the zeroes and its coefficients.
- For what value of K is 4 a zero of $f(x) = x^2 + kx + 4$?
- Find the quotient and remainder when $p(x)$ is divided by $q(x)$.
 (i) $p(x) = 6x^3 + 11x^2 - 39x - 65, q(x) = x^2 - 1 + x$
 (ii) $p(x) = 4 + 9x^2 - 4x^2, q(x) = x + 3x^2 - 1$
 (iii) $p(x) = 30x^4 - 82x^2 + 11x^3 + 48 - 12x, q(x) = 3x^2 + 2x - 4$
- What must be subtracted from $8x^4 + 14x^3 - 2x^2 + 7x - 8$ so that the resulting polynomial is exactly divisible by $4x^2 + 3x - 2$?
- What must be added to $4x^4 + 2x^3 - 2x^2 + x - 1$, so that the resulting polynomial is divisible by $x^2 + 2x - 3$?
- If -2 is a zero of $f(x) = x^3 + 13x^2 + 32x + 20$, find its other zeroes.
- $\sqrt{3}$ and $-\sqrt{3}$ are zeroes of $f(x) = x^4 - 3x^3 - x^2 + 9x - 6$. Find all the zeroes of $p(x)$.
- Obtain all zeroes of the polynomial $p(x) = 2x^4 + x^3 - 14x^2 - 19x - 6$, if two of its zeroes are -1 and -2.
- Find all the zeroes of $f(x) = 2x^4 - 2x^3 - 7x^2 + 3x + 6$ if two of its zeroes are $\frac{\sqrt{3}}{2}$ and $-\frac{\sqrt{3}}{2}$.
- Find all values of p and q so that 1, -2 are zeroes of the polynomial $f(x) = x^3 + 10x^2 + px + q$.
- If $p(x) = 2x^4 + 3x^3 - 3x^2 - 2x + 5$ is divided by $2x^2 + 3x - 1$, then the remainder is $x - a$. Find a.
- On dividing $f(x) = 2x^3 - 5x^2 + 4x - 8$ by $g(x)$, the quotient and the remainder are $(2x - 9)$ and $24x - 17$, respectively. Find $g(x)$.