

Board –

Class –

Topic – Polynomial

1. Find the zeroes of the quadratic polynomial $3x^2 - 2$ and verify the relationship between the zeroes and the coefficients. [2016]

$$\text{Ans:- } \sqrt{\frac{2}{3}}, -\sqrt{\frac{2}{3}}$$

2. Divide the polynomial $x^4 - 11x^2 + 34x - 12$ by $x - 2$ and find the quotient and the remainder. Also verify the division algorithm. [2016]

$$\begin{aligned} q(x) &= x^3 + 2x^2 - 13x + 8 \\ \text{Ans:- } r(x) &= 4 \end{aligned}$$

3. If one zero of the quadratic polynomial $f(x) = 4x^2 - 8kx + 8x - 9$ is negative of the other, then find the zeroes of $kx^2 + 3kx + 2$. [2015]

$$\text{Ans:- } -1 \text{ \& } -2$$

4. Obtain all other zeroes of the polynomial $x^4 + 4x^3 - 2x^2 - 20x - 15$ if two of its zeroes are $\sqrt{5}$ and $-\sqrt{5}$ [2015]

$$\text{Ans:- } -1 \text{ and } -3$$

5. If a polynomial $x^4 - 3x^3 - 6x^2 + kx - 16$ is exactly divisible by $x^2 - 3x + 2$, then find the value of k . [2013]

$$\text{Ans:- } 24$$

6. Divide $2x^4 - 9x^3 + 5x^2 + 3x - 8$ by $x^2 - 4x + 1$ and verify the division algorithm. [2010]

7. If the polynomial $x^4 + 2x^3 + 8x^2 + 12x + 18$ is divided by another polynomial $x^2 + 5$, the remainder comes out to be $px + q$, find values of p and q . [2009]

$$\text{Ans:- } p = 2 \text{ \& } q = 3$$

8. Find all the zeroes of the polynomial $2x^3 + x^2 - 6x - 3$, if two of its zeroes are $-\sqrt{3}$ and $\sqrt{3}$

$$\text{Ans:- } -1/2$$

9. For what value of p , (-4) is a zero of the polynomial $x^2 - 2x - (7p + 3)$ [2009]

$$\text{Ans :- } 3$$

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

$$\text{Ans:- } -1 \text{ and } 1$$

11. An NGO decided to distribute books and pencils to the students of a school running by some other NGO. For this, they collected some amount from different number of people. The total amount collected is represented by $4x^4 + 2x^3 - 8x^2 + 3x - 7$. The amount is equally divided between each of the students. The number of students, who received the amount, is represented by $x - 2 + 2x^2$. After distribution, $5x - 11$, amount is left with the NGO which they donated to school for their infrastructure. Find the amount received by each student from the NGO.

What value has been depicted here?

Ans:- $(2x^2 - 2)$