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(Affiliated to CBSE up to +2 Level)

CLASS:10TH

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SUB.:MATHEMATICS

Important Questions for Class 10 Maths Chapter 2 Polynomials

Question 1.If the sum of zeroes of the quadratic polynomial $3x^2 - kx + 6$ is 3, then find the value of k.

Question 2.If α and β are the zeroes of the polynomial $ax^2 + bx + c$, find the value of $\alpha^2 + \beta^2$.

Question 3.If the sum of the zeroes of the polynomial $p(x) = (k^2 - 14)x^2 - 2x - 12$ is 1, then find the value of k.

Question 4.If α and β are the zeroes of a polynomial such that $\alpha + \beta = -6$ and $\alpha\beta = 5$, then find the polynomial.

Question 5.A quadratic polynomial, whose zeroes are -4 and -5, is

Polynomials Class 10 Important Questions Short Answer-I (2 Marks)

Question 6.Find the condition that zeroes of polynomial $p(x) = ax^2 + bx + c$ are reciprocal of each other.

Question 7.Form a quadratic polynomial whose zeroes are $3 + \sqrt{2}$ and $3 - \sqrt{2}$.

Question 8.Find a quadratic polynomial, the sum and product of whose zeroes are $1 + \sqrt{3}$ and $1 - \sqrt{3}$ respectively.

Question 9.Find a quadratic polynomial, the sum and product of whose zeroes are 0 and $-\sqrt{2}$ respectively.

Question 10.Find the zeroes of the quadratic polynomial $\sqrt{3}x^2 - 8x + 4\sqrt{3}$.

Question 11.If the zeroes of the polynomial $x^2 + px + q$ are double in value to the zeroes of $2x^2 - 5x - 3$, find the value of p and q. (2012)

Question 12.Can $(x - 2)$ be the remainder on division of a polynomial $p(x)$ by $(2x + 3)$? Justify your answer.

Question 13.Find a quadratic polynomial whose zeroes are $3 + \sqrt{5}$ and $3 - \sqrt{5}$.

Question 14.Find the quadratic polynomial whose zeroes are -2 and -5. Verify the relationship between zeroes and coefficients of the polynomial. (2013)

Question 15. Find the zeroes of the quadratic polynomial $3x^2 - 75$ and verify the relationship between the zeroes and the coefficients.

Question 16. Find the zeroes of $p(x) = 2x^2 - x - 6$ and verify the relationship of zeroes with these co-efficient.

Question 17. What must be subtracted from the polynomial $f(x) = x^4 + 2x^3 - 13x^2 - 12x + 21$ so that the resulting polynomial is exactly divisible by $x^2 - 4x + 3$?

Polynomials Class 10 Important Questions Short Answer-II (3 Marks)

Question 18. Verify whether 2, 3 and 12 are the zeroes of the polynomial $p(x) = 2x^3 - 11x^2 + 17x - 6$.

Question 19. Show that $1/2$ and $-3/2$ are the zeroes of the polynomial $4x^2 + 4x - 3$ and verify the relationship between zeroes and co-efficient of polynomial.

Question 20. Find a quadratic polynomial, the sum and product of whose zeroes are -8 and 12 respectively. Hence find the zeroes.

Question 21. Find a quadratic polynomial, the sum and product of whose zeroes are 0 and $-3/5$ respectively. Hence find the zeroes.

Question 22. Find the zeroes of the quadratic polynomial $6x^2 - 3 - 7x$ and verify the relationship between the zeroes and the coefficients of the polynomial. Question 23. Find the zeroes of the quadratic polynomial $f(x) = x^2 - 3x - 28$ and verify the relationship between the zeroes and the co-efficient of the polynomial. Question 24. If α and β are the zeroes of the polynomial $6y^2 - 7y + 2$, find a quadratic polynomial whose zeroes are $1/\alpha$ and $1/\beta$.

Question 25. Divide $3x^2 + 5x - 1$ by $x + 2$ and verify the division algorithm.

Question 26. On dividing $3x^3 + 4x^2 + 5x - 13$ by a polynomial $g(x)$ the quotient and remainder were $3x + 10$ and $16x - 43$ respectively. Find the polynomial $g(x)$. Question

27. Check whether polynomial $x - 1$ is a factor of the polynomial $x^3 - 8x^2 + 19x - 12$. Verify by division algorithm.

Polynomials Class 10 Important Questions Long Answer (4 Marks)

Question 28. Divide $4x^3 + 2x^2 + 5x - 6$ by $2x^2 + 1 + 3x$ and verify the division algorithm.

Question 29. Given that $x - \sqrt{5}$ is a factor of the polynomial $x^3 - 3\sqrt{5}x^2 - 5x + 15\sqrt{5}$, find all the zeroes of the polynomial.

Question 30.If a polynomial $x^4 + 5x^3 + 4x^2 - 10x - 12$ has two zeroes as -2 and -3, then find the other zeroes. (2014)

Question 31.Find all the zeroes of the polynomial $8x^4 + 8x^3 - 18x^2 - 20x - 5$, if it is given that two of its zeroes are $\sqrt{\frac{5}{2}}$ and $-\sqrt{\frac{5}{2}}$.

Question 32.If $p(x) = x^3 - 2x^2 + kx + 5$ is divided by $(x - 2)$, the remainder is 11. Find k. Hence find all the zeroes of $x^3 + kx^2 + 3x + 1$.

Question 33.If α and β are zeroes of $p(x) = kx^2 + 4x + 4$, such that $\alpha^2 + \beta^2 = 24$, find k.

Question 34.If α and β are the zeroes of the polynomial $p(x) = 2x^2 + 5x + k$, satisfying the relation, $\alpha^2 + \beta^2 + \alpha\beta = 21/4$ then find the value of k.

Question 35.What must be subtracted from $p(x) = 8x^4 + 14x^3 - 2x^2 + 8x - 12$ so that $4x^2 + 3x - 2$ is factor of $p(x)$? This question was given to group of students for working together.

Question 36.Find the values of a and b so that $x^4 + x^3 + 8x^2 + ax - b$ is divisible by $x^2 + 1$.

Question 37.If a polynomial $3x^4 - 4x^3 - 16x^2 + 15x + 14$ is divided by another polynomial $x^2 - 4$, the remainder comes out to be $px + q$. Find the value of p and q. (2014)

Question 38.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 the values of p and q.