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QUESTION BANK

CH-2 POLYNOMIALS

1. Degree of polynomial $y^3-2y^2-\sqrt{3}y+1/2$ is (a) 1/2 (b) 2 (c) 3 (d) 3/2.
2. Zeroes of $P(x) = 2x^2+9x-35$ are (a) 7 and 5 2 (b) -7 and 5/2 (c) 7 and 5 (d) 7 and 2.
3. The quadratic polynomial whore zeros are 3 and -5 is (a) $x^2+2x-15$ (b) x^2+3x-8 (c) $x^2-5x-15$ (d) None of these.
4. If α and β are the zeros of the quadratic polynomial $P(x) = x^2-px+q$, then find the value of $\alpha^2+\beta^2$.
5. Find the zeros of the polynomial $p(x) = 4\sqrt{3}x^2+5x-2\sqrt{3}$ and verify the relationship between the zeros and its coefficients.
6. Find the value of 'k' so that the zeroes of the quadratic polynomial $3x^2-kx+14$ are in the ratio 7:6
7. If one zero of the quadratic polynomial $f(x) = 4x^2-8kx-9$ is negative of the other, find the value of 'k' 8. Check whether the polynomial (t^2-3) is a factor of the polynomial $2t^4+3t^3-2t^2-9t-12$ by division method.
9. Obtain all other zeroes of $3x^4+6x^3-2x^2-10x-5$. If two of its zeroes are $\pm\sqrt{\frac{5}{3}}$.
10. If the polynomial $x^4-6x^3+16x^2-25x+10$ id divided by another polynomial x^2-2x+k, the remainder comes out to be (x + a), find 'k' and 'a'
11. Find the value of 'k' for which the polynomial $x^4+10x^3+25x^2+15x+k$ is exactly divisible by (x+7)
12. If α and β are the zeros of the polynomial $f(x) = x^2+px+q$, form polynomial whore zeros are $(\alpha+\beta)^2$ and $(\alpha-\beta)^2$.
13. Find all the common zeroes of the polynomials: $x^3+5x^2-9x-45$ and x^3+8x^2+15x.
14. Determine whether the given values of x are zeroes of the polynomial or not (i) $3x^2-2x-1$; $x = \pm 1$

    (ii) $2x^2-6x+3$; $x = \pm 1/2$ (iii) $(2x+3)(3x-2)$; $x = \pm 2/3$ (iv) x^2+x+1; $x = \pm 1$ (v) x^2+6x+5; x = -1, x = -5

    (vi)$6x^2-x-2$; x =-1/2 , x =2/3 (vii)$x^2+\square 2x-4$; $x=\square 2$, $x=-2\square 2$ (vii)$9x^2-3x-2$; x =-1/3 x =2/3 (viii)(x+4)(x-5); x = -4, x=5

    (ix)(3x+8)(2x+5); $x=2\frac{2}{3}$, $x = 2\frac{1}{2}$
15. Find the sum and product of the zeroes of the polynomial (i)x^2-6x+5 (ii) $px^2+qx+pq$ (iii) x^2-25 (iv) $4x^2-7x$.

16. Form the polynomial whose zeroes are (i) 5, 6 (ii)2, -2 (iii) $3 + \sqrt{3}, 3 - \sqrt{3}$ (iv) $\frac{4+\sqrt{2}}{2}, \frac{4-\sqrt{2}}{2}$

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

18. Form the polynomial whose zeroes are $2+\frac{1}{\sqrt{2}}, 2 - \frac{1}{\sqrt{2}}$

19. For which value of a and b are the zero of $q(x)= x^3+2x^2+a$ also the zeros of the polynomial $p(x)=x^5-x^4-4x^3+3x^2+3x+b$? which zeros of p(x) are not the zeros of q(x)?

20. Given that √5 is a factor of the cubic polynomial $6x^3+\sqrt{2}x^2-10x-4\sqrt{2}$,find its other two zero.

21. Find k so that x^2+2x+k is a factor of $2x^4+x^3-14x^2+5x+6$. Also find all the zeroes of the two polynomials.

22. Find the value of k , if $\propto and\ \beta$ are zeroes of the quadratic polynomial kx^2+4x+4 and $(\propto + \beta)^2 - 2 \propto \beta = 24$. 23. Form the polynomial whose zeroes are $\propto, \beta$ and γ such that $\propto + \beta + \gamma = 2$, $\propto \beta + \beta\gamma + \gamma \propto = -7\ and$ $\propto \beta\ \gamma = -14$.

24. What should be subtracted from $p(x)= 6x^4+7x^3+26x-25x+25$ so that the resulting polynomial is exactly divisible by $3x^2-x+4$?

25. Find the value of a and b so that $x^4+x^3+8x^2+ax+b$ is divisible by $x^2 + 1$.

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