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ASSIGNMENT ,CLASS – X

CH-2 POLYNOMIALS

- Q:1 Find all other zeroes of the polynomial $3x^4 - 12x^3 + 10x^2 + 8x - 8$, if two of its zeroes are $\sqrt{\frac{2}{3}}$ and $-\sqrt{\frac{2}{3}}$. (2 ,2)
- Q:2 If one zero of a polynomial $2x^3 + x^2 - 7x - 6$ is 2 , then find all the zeroes. (-1, -3/2)
- Q:3 Find the zeroes of the quadratic polynomial $4\sqrt{3}x^2 + 5x - 2\sqrt{3}$. Also verify the relationship between its zeroes and coefficients. $(-2/\sqrt{3}, \sqrt{3}/4)$
- Q:4 If one zero of the polynomial $3 - \sqrt{5}$ and product of zeroes is 4 . Form the quadratic polynomial. $(x^2 - 6x + 4)$
- Q:5 If α and β are zeroes of a quadratic polynomial $x^2 - 5$, then form a quadratic polynomial whose zeroes are $1 + \alpha$ and $1 + \beta$. $(x^2 - 2x - 4)$
- Q:6 If α and β are the zeroes of $p(x) = 4x^2 + 3x + 7$, then find (i) $\frac{1}{\alpha} + \frac{1}{\beta}$ (ii) $\alpha^2 + \beta^2$
- Q:7 If one zero of polynomial $(a^2 + 9)x^2 + 13x + 6a$ is reciprocal of the other, Find the value of a. (3)
- Q:8 What should be added to the polynomial $x^2 - 5x + 4$, so that 3 is the zero of the polynomial ? (2)
- Q:9 If a polynomial $8x^4 - 8x^3 - 18x^2 - px - q$ is exactly divisible by $4x^2 - 4x + 1$, then find the values of p and q . (-20 , 5)
- Q:10 If the polynomial $f(x) = 3x^4 - 9x^3 + x^2 + 15x + k$ is completely divisible by $3x^2 - 5$, then find the value of k and hence the other zeroes of the polynomial. (- 10, 2 , 1)
- Q:11 On dividing the polynomial $p(x) = 2x^3 + 4x^2 + 5x + 7$ by a polynomial $g(x)$, the quotient and the remainder were $2x$ and $7 - 5x$ respectively. Find $g(x)$ $(x^2 + 2x + 5)$

CH- 3 PAIR OF LINEAR EQUATION IN TWO VARIABLES

- Q:1 If 4 times the area of a smaller square is subtracted from the area of a larger square , the result is 144 m^2 . The sum of the area of the two squares is 464 m^2 . Determine the side of the two squares. (8m , 20 m)
- Q:2 Solve for x and y : $x + 4y = 27$; $x + 2y = 21$. (1/3 , 1/15)
- Q:3 A man travels 600 km partly by train and partly by car. It takes 8h and 40 min , if he travels 320km by train and the rest by car. It would take 30 min more , if he travels 200 km by train and the rest by car. Find the speed of the train and the car. (80, 60)
- Q:4 Solve the following pair of linear equation graphically and find the vertices of the triangle formed by these lines and y-axis $x - y + 1 = 0$; $3x + 2y - 12 = 0$ (2,3)
- Q:5 For which value(s) of k , do the pair of linear equations $kx + y = k^2$ and $x + ky = 1$ have
(i) No solution (ii) Infinitely many solutions (iii) unique solution
($k=-1, k=1, k \neq$)

- Q:6 A boat goes 24 km upstream and 28 km downstream in 6 hours . It goes 30 km upstream and 21 km downstream in $6\frac{1}{2}$ hours. Find the speed of the boat in still water and speed of the stream. (10, 4)
- Q:7 Places A and B are 150 km apart on highway. One car starts from A and another from B at the same time. If the cars travel in the same direction at different speeds, they meet in 15 hours . If they travel towards each other , they meet in 1 hour. What are the speeds of two cars ? (80.70)
- Q:8 8 men and 12 boys can finish a piece of work in 5 days , while 6 men and 8 boys can finish it in 7 days . Find the time taken by 1 man alone and that of 1 boy alone . (70 , 140)
- Q:9 Find the values of a and b for which the following system of linear equations has infinite number of solutions. $(a + b)x - 2by = 5a + 2b + 1$; $3x - y = 14$ (5,1)
- Q:10 Solve for x and y $37x + 43y = 123$; $43x + 37y = 117$ (1, 2)

CH- 4 QUADRATIC EQUATION

- Q:1 Solve for x $\sqrt{2x+9} + x = 13$ (8)
- Q:2 If - 5 is a root of the quadratic equation $2x^2 + px - 15 = 0$ and the quadratic equation $p(x^2 + x) + k = 0$ has equal roots, then find the value of k. (7/4)
- Q:3 Solve for x : $\frac{1}{2a+b+2x} = \frac{1}{2a} + \frac{1}{b} + \frac{1}{2x}$ (- a , -b/2)
- Q:4 Find the value of p for which the quadratic equation $x(x + 4) + p = 0$ has real roots.($\leq 1/4$)
- Q:5 Solve $3x^2 - 5x + 2 = 0$ by using method of completing square. (1 , 2/3)
- Q:6 Solve for x : $2\left(\frac{2x-1}{x+3}\right) - 3\left(\frac{x+3}{2x-1}\right) = 5$ (-10, -1/5)
- Q:7 If the quadratic equation $(1 + m^2)x^2 + 2mcx + c^2 - a^2 = 0$ has equal roots, prove that $c^2 = a^2(1 + m^2)$
- Q:8 Rs. 6500 were divided equally among a certain number of persons. Had there been 15 more persons, each would have got Rs.30 less. Find the original number of persons. (50)
- Q:9 A bus travels at a certain average speed for a distance of 75 km and then travels a distance of 90 km at an average speed of 10 km/hr more than the first speed. It takes 3 hours to complete the total journey , Find its original speed. (8)
- Q:10 A motor boat whose speed in still water is 24km/hr takes 1 hour more to go 32km upstream than to return downstream to the same spot. Find the speed of the stream. (8)

