

Chapter 2 - Polynomials

MM 20

Class X

Time 45 minutes

1 Mark Each

1. If one zero of the quadratic polynomial $x^2 + 3x + k$ is 3, then the value of k is
(A) 10 (B) -18 (C) 5 (D) -5
2. Given that two of the zeroes of the cubic polynomial $ax^3 + bx^2 + cx + d$ are 0 each, the third zero is
(A) $\sqrt{\frac{c}{a}}$ (B) $-\sqrt{\frac{b}{a}}$ (C) $\sqrt{\frac{c}{a}}$ (D) $-\sqrt{\frac{d}{a}}$
3. The number of polynomials having zeroes as -2 and 5 is
(A) 1 (B) 2 (C) 3 (D) more than 11
4. If the zeroes of the quadratic polynomial $ax^2 + bx + c$, $c \neq 0$ are equal, then
(A) c and a have opposite signs (B) c and b have opposite signs
(C) c and a have the same sign (D) c and b have the same sign
5. A polynomial of degree 7 has _____ zeros.

2 Marks Each

6. Find the zeroes of the polynomial $x^2 + \frac{1}{12}x - \frac{1}{2}$ and verify the relation between the coefficients and the zeroes of the polynomial.
7. Find a quadratic polynomial, the sum and product of whose zeroes are $\sqrt{2}$ and $\frac{3}{2}$ respectively. Also find its zeroes.
8. The length, breadth and height of a room are 16m 256cm, 12m 75cm and 8m 50cm, respectively. Determine the longest rod which can measure the three dimensions of the room exactly.

3 Marks Each

9. Given that the zeroes of the cubic polynomial $x^3 - 15x^2 + 71x - 105$ are of the form $a + 2b$, $a + b$, a for some real numbers a and b, find the values of a and b as well as the zeroes of the given polynomial.

10. If the remainder on division of $x^3 + 2x^2 + kx + 3$ by $x - 3$ is 21, find the quotient and the value of k . Hence, find the zeroes of the cubic polynomial $x^3 + 2x^2 + kx - 18$.
11. If $x^2 - 1$ is a factor of $ax^4 + bx^3 + cx^2 + dx + e$, show that $a + c + e = b + d = 0$