

# Previous Year Questions (PYQs) - Class 10 Mathematics

## Chapter 2: Polynomials

1. Find the zeroes of the quadratic polynomial  $x^2 - 7x + 10$  and verify the relationship between the zeroes and coefficients. (2 Marks)
2. If one zero of the polynomial  $3x^2 - 10x + k$  is 3, find the value of  $k$ . (2 Marks)
3. Find the quadratic polynomial whose zeroes are 4 and -3. (2 Marks)
4. Verify that 2 and -3 are zeroes of the polynomial  $x^2 + x - 6$ . (2 Marks)
5. Find the zeroes of the polynomial  $2x^2 - 5x + 3$  and verify the relationship between the zeroes and coefficients. (3 Marks)
6. The sum and product of zeroes of a quadratic polynomial are -3 and 2 respectively. Find the quadratic polynomial. (2 Marks)
7. If the zeroes of the quadratic polynomial  $x^2 - (k+6)x + 2(k-1)$  are equal, find the value of  $k$ . (3 Marks)
8. Find the zeroes of the cubic polynomial  $x^3 - 6x^2 + 11x - 6$ . (3 Marks)
9. If one zero of the polynomial  $x^2 + px + 12$  is 4, find the value of  $p$  and the other zero. (3 Marks)
10. Solve for  $x$ :  $4x^2 - 4x - 3 = 0$  using the quadratic formula. (3 Marks)
11. Show that  $2 + \sqrt{3}$  and  $2 - \sqrt{3}$  are the zeroes of the polynomial  $x^2 - 4x + 1$ . (3 Marks)
12. Find the remainder when  $x^3 + 2x^2 - 5x + 3$  is divided by  $x - 2$ . (2 Marks)
13. If  $a$  and  $b$  are the zeroes of  $x^2 - 7x + 12$ , find the value of  $a^2 + b^2$ . (3 Marks)
14. If  $a$  and  $b$  are the zeroes of  $2x^2 - 3x + 5$ , find the value of  $a^3 + b^3$ . (3 Marks)
15. Find all zeroes of the polynomial  $x^4 - 5x^2 + 4$  given that two of its zeroes are  $\sqrt{2}$  and  $-\sqrt{2}$ . (4 Marks)
16. Find the zeroes of the polynomial  $x^3 - 4x^2 - x + 4$  by factorization. (3 Marks)
17. Find a cubic polynomial whose zeroes are -2, 1, and 3. (3 Marks)
18. Find the value of  $k$  if  $x - 1$  is a factor of the polynomial  $x^3 - 3x^2 + kx - 3$ . (3 Marks)
19. Show that  $x - 2$  is a factor of the polynomial  $x^3 - 7x + 6$  and find the remaining factors. (3 Marks)
20. If  $a$  and  $b$  are the zeroes of  $x^2 - 3x + 2$ , find the value of  $(1/a) + (1/b)$ . (3 Marks)