**MCQ WORKSHEET**

**CLASS X**

**CHAPTER–2**

**POLYNOMIALS**

1. The value of k for which (–4) is a zero of the polynomial x2 – x – (2k +2) is

(a) 3 (b) 9 (c) 6 (d) –1

2. The number of zeroes of the polynomial from the graph is



(a) 0 (b) 1 (c) 2 (d) 3

3. If one of the zero of the quadratic polynomial x2 +3 x + k is 2, then the value of k is

(a) 10 (b) –10 (c) 5 (d) –5

4. A quadratic polynomial whose zeroes are –3 and 4 is

(a) x 2 – x +12 (b) x2 +x + 12 (c) 2x2 + 2x – 24. (d) None of the above.

5. The zeroes of the polynomial x2 + 7x + 10 are

(a) 2 and 5 (b) –2 and 5 (c) –2 and –5 (d) 2 and –5

6. The zeroes of the polynomial x2 – 3 are

(a) 2 and 5 (b) –2 and 5 (c) –2 and –5 (d) none of the above

7. The number of zeroes of the polynomial from the graph is



(a) 0 (b) 1 (c) 2 (d) 3

8. A quadratic polynomial whose sum and product of zeroes

are –3 and 2 is

(a) x2 – 3x +2 (b) x2 + 3x + 2 (c) x2 + 2x – 3. (d) x2 + 2x + 3

9. If the sum of the zeroes of the polynomial f(x) = 2x3 – 3kx2 + 4x – 5 is 6, then value of k is

(a) 2 (b) 4 (c) –2 (d) – 4

10. The zeroes of a polynomial *p*(*x*) are precisely the *x*-coordinates of the points, where the graph of *y* = *p*(*x*) intersects the

(a) x – axis (b) y – axis (c) origin (d) none of the above

**Short type question**

POLYNOMIALS

(H.W)

Answers the following questions:

1. What is a quadratic polynomial?
2. What is the degree of a quadratic polynomial?
3. What are the zeroes of a polynomial?
4. How many zeroes a quadratic polynomial can have?
5. What is the shape of curve of a quadratic polynomial graph?
6. What is the relationship between zeroes and coefficients of a quadratic polynomial?
7. Find a quadratic polynomial, the sum and product of whose zeroes are -4 and -3 respectively.
8. State the division algorithm for polynomials.
9. State Remainder Theorem.
10. State Factor Theorem

**PRACTICE QUESTIONS**

**(H.W)**

**1.**  If one zero of the polynomial 5z2 + 13z – p is reciprocal of the other, then find p.

**2.**  If the product of two zeroes of polynomial 2x3 + 3x2 – 5x – 6 is 3, then find its third zero.

**3.**  Find the polynomial of least degree which should be subtracted from the polynomial x4 + 2x3 – 4x2 + 6 x – 3 so that it is exactly divisible by x2 – x + 1.

**4.**  Is polynomial y4 + 4y2 + 5 have zeroes or not?

**5.**  Write a quadratic polynomial, sum of whose zeroes is 2 and product is 5.

**6.**  Write the zeroes of the polynomial x2 + 2 x + 1.

**7.**  A polynomial g(x) of degree zero is added to the polynomial 2x3 + 5x2 – 14x + 10 so that it becomes exactly divisible by 2x – 3. Find the g(x).

**8.**  Find the zeroes of the quadratic polynomial x2 + 5x + 6 and verify the relationship between the zeroes and the coefficients.

**9.**  Draw graph of the function f(x) = –2x2 + 4x.

**10.**  If x + a is a factor of the polynomial x2 + px + q and x2 + mx + n prove that a=

**11.**  Find a cubic polynomial with the sum, sum of the product of its zeroes taken two at a time and product of its zeroes are 3, respectively.

**12.**  Write cubic polynomial whose zeroes are (2+/2, (2-.

**13.**  α, β, γ are zeroes of cubic polynomial kx3 – 5x + 9.  
          If α3 + β3 + γ3 = 27, find the value of k.

**14.**  Two zeroes of cubic polynomial ax3 + 3x2 – b x – 6 are –1 and –2. Find the third zero and value of a and b.

**15.**  α, β, γ are zeroes of cubic polynomial x3 – 2x2 + q x – r.  
         If α + β = 0 then show that 2q = r.

**16.**  α, β, γ are zeroes of polynomial x3 + px2 + q x + 2 such that α.  
         β + 1 = 0. Find the value of 2p + q + 5.

**17.**  Using division algorithm, find the quotient and remainder on dividing f(x) by g(x), where f(x) = 6x3 + 13x2 + x – 2 and g(x) = 2x + 1

(AI CBSE 2008 C)

**18.**  If the polynomial 6x4 + 8x3 + 17x2 + 21x + 7 is divided by another polynomial

3x2 + 4x + 1 then the remainder comes out to be ax + b, find ‘a’ and ‘b’

(CBSE 2009)

**19.**  If α and β are zeroes of the quadratic polynomial x2 – 6x + a; find the value of ‘a’ if 3α + 2β = 20.

(CBSE 2010, 2011)

20. Draw the graph of the polynomial f(x) = x3 – 4x.

**IMPORTANT QUESTIONS**

**1.**  For what value of k, (–4) is a zero of the polynomial x2 – x – (2k + 2)?

(CBSE 2009)

**2.**  For what value of p, (–4) is a zero of the polynomial x2 – 2x – (7p + 3)?

(CBSE 2009)

**3.**  If 1 is a zero of the polynomial p(x) = ax2 – 3(a – 1) x – 1, then find the value of a.

(Al CBSE 2009)

**4.**  If (x + a) is a factor of 2x2 + 2ax + 5x + 10 find a.

(Al CBSE 2008 F)

**5.**  Write the zeroes of the polynomial x2 + 2x + 1.

(CBSE 2008)

**6.**  Write the zeroes of the polynomial x2 – x – 6.

(CBSE 2008)

**7.**  Write a quadratic polynomial, the sum and product of whose zeroes are 3 and –2 respectively.

(CBSE 2008)

**12.**  Find the zeroes of the quadratic polynomial 6x2 – 3 – 7x and verify the relationship between the zeroes and the coefficient of the polynomial.

(CBSE 2008)

**13.**  Find the zeroes of the quadratic polynomial 5x2 – 4 – 8x and verify the relationship between the zeroes and the coefficient of the polynomial.

(AI CBSE 2008)

**14.**  Find the quadratic polynomial, the sum of whose zeroes is 8 and their product is 12. Hence, find the zeroes of the polynomial.

(CBSE 2008)

**15.**  If one zero of the polynomial (a2 – 9) x2 + 13x + 6a is reciprocal of the other, find the value of ‘a’.

(AI CBSE 2008)

**16.**  If the product of zeroes of the polynomial ax2 – 6x – 6 is 4, find the value of ‘a’.

(AI CBSE 2008)

**17.**  Find all the zeros of the polynomial x4 + x3 – 34x2 – 4x + 120, if two of its zeroes are 2 and – 2.

(AI CBSE 2008)

**18.**  Find all the zeroes of the polynomial 2x4 + 7x – 19x2 – 14x + 30, if two of its zeroes are √2 and -√2.

(AI CBSE 2008)

**19.**  Find the quadratic polynomial whose zeroes are 1 and –3. Verify the relation between the coefficients and the zeroes of the polynomial.

(CBSE 2008 C)

**20.**  Find the zeroes of the quadratic polynomial 4x2 – 4x – 3 and verify the relation between the zeroes and its coefficients.

(CBSE 2008 C)

**21.**  Obtain all other zeroes of the polynomial 2x3 – 4x – x2 + 2, if two of its zeroes are √2 and -√2. (CBSE 2008 C)

**22.**  Find all the zeroes of x4 – 3x3 + 6x – 4, if two of its zeroes are √2 and -√2.

(AI CBSE 2008 C)

**23.**  Find a quadratic polynomial whose zeroes are –4 and 3 and verify the relationship between the zeroes and the coefficients.

(AI CBSE 2008 C)

**24.**  Using division algorithm, find the quotient and remainder on dividing f(x) by g(x), where f(x) = 6x3 + 13x2 + x – 2 and g(x) = 2x + 1

(AI CBSE 2008 C)

**25.**  If the polynomial 6x4 + 8x3 + 17x2 + 21x + 7 is divided by another polynomial 3x2 + 4x + 1 then the remainder comes out to be ax + b, find ‘a’ and ‘b’

(CBSE 2009)

**26.**  If the polynomial x4 + 2x3 + 8x2 + 12x + 18 is divided by another polynomial x2 + 5, the remainder comes out to be px + q. Find the value of p and q.

(CBSE 2009)

**27.**  If α and β are zeroes of the quadratic polynomial x2 – 6x + a; find the value of ‘a’ if 3α + 2β = 20.

(CBSE 2010, 2011)

**28.** An NGO decided to distribute books and pencils to the students of a school running by some other NGO. For this they collected some amount from different people. The total amount collected is represented by 4x4 + 2x3 – 8x2 + 3x – 7.  From this fund each student received an equal amount. The number of students, who received the amount, is represented by x – 2 + 2x2. After distribution, 5x -11, amount is left with the NGO which they donated to school for their infrastructure. Find the amount received by each student from the NGO. What value has been depicted here?