IX Class

PRACTICE MATERIAL

I. One mark questions.

1. Find the product: \((4x - 3)(3x + 4)\)

2. Write the quotient without actual division in \(\frac{8a^3 + 27b^3 + 90ab - 125}{2a + 3b - 5}\)

3. The product of \(16x^2 + 20x + 25\) and the other factor is in the form of \(a^3 - b^3\). Find the second factor.

4. Find the product: \((x^3 - 2)(x^6 + 2x^3 + 4)\)

5. Find the value of \((98)^3\) using formula.

6. If \(a + b + c = 9\), \(ab + bc + ca = 26\) find the value of \(a^2 + b^2 + c^2\)

7. Expand: \((x - 2y + z)^2\)

8. If \(a - b = 2\), \(ab = 15\) find the value of \(a^3 - b^3\)

9. Find the product: \((x - \sqrt{y})(x + \sqrt{y})(x + y)\)

10. If \(A = 4x - 3\), \(B = 3x - 5\) find \(A \times B\)

11. If \(A = 3x^2 - 4x^2 + 5\), \(B = x^3 - 2x^2 + 3x - 4\), \(C = 3x^3 - x^2 - x + 2\) find \((A - B) - C\)

12. If \(A = 5 - 3x^2 + 4x\), \(B = 4 - 5x + x^2 - 2x^3\) find \(A + B\).

13. Find the value of \(3.2\ x^2\) when \(x = 1.2\)

14. Write the additive inverse of \(8x^4 - 8x^3 + 15x - 10x^2 + 2\)

15. Find the product: \((1 + a)(1 + b)\)

II. Choose the correct answer.

16. Which of the following is not a polynomial? [  ]

   a) \(2x + 3\)  b) \(x^2 - x\)  c) \(x + \frac{1}{x}\)  d) \(x + 1\)

17. Polynomials do not have [  ]

   a) additive inverse  b) multiplicative inverse  
   c) identity in addition  d) identity in multiplication
18. \((\sqrt{x} + \sqrt{y})(\sqrt{x} - \sqrt{y}) = \)  
   a) \(x + y\)  
   b) \(x - y\)  
   c) \(\sqrt{x} - \sqrt{y}\)  
   d) \(\sqrt{x} + \sqrt{y}\)

19. \((\_\_\_\_\_\_\_\_\_\_) (x - \sqrt{xy} + y) = \sqrt{x^3} - \sqrt{y^3}\)  
   a) \(\sqrt{x} + \sqrt{y}\)  
   b) \(\sqrt{x} - \sqrt{y}\)  
   c) \(\sqrt[3]{x} + \sqrt[3]{y}\)  
   d) \(\sqrt[3]{x} - \sqrt[3]{y}\)

20. \(A = 2x - 3\), \(B = 3 + x\) then \(B + A = \)  
   a) \(2x + 1\)  
   b) \(3x\)  
   c) \(3x + 1\)  
   d) \(2x + 3\)

21. \((a - b)^2 - (a + b)^2 = \)  
   a) \(2(a^2 + b^2)\)  
   b) \(2(a^2 - b^2)\)  
   c) \(-4ab\)  
   d) \(4ab\)

22. If \(x - \frac{1}{x} = 3\) then \(x^3 - \frac{1}{x^3} = \)  
   a) \(27\)  
   b) \(9\)  
   c) \(36\)  
   d) \(6\)

23. The co-efficient of \(x\) in \((x + a)(x + b)\) is  
   a) \(a + b\)  
   b) \(ab\)  
   c) \(a - b\)  
   d) \(-ab\)

24. Multiplicative identity of polynomials is  
   a) \(0\)  
   b) \(1\)  
   c) \(x\)  
   d) \(a\)

25. \(A\) and \(B\) are two polynomials such that \(A + B = 0\) then \(B\) is called  
   a) additive identity of \(A\)  
   b) additive inverse of \(A\)  
   c) multiplicative identity of \(A\)  
   d) none

26. Subtraction of polynomials is not  
   a) associate  
   b) closure  
   c) commutative  
   d) none

27. The degree of monomial is \(-1.5x^3\)  
   a) \(-1.5\)  
   b) \(3/2\)  
   c) \(3\)  
   d) \(2/3\)

28. The value of \(-1.2x^3\) when \(x = 2\) is  
   a) \(9.6\)  
   b) \(-9.6\)  
   c) \(8\)  
   d) \(8.6\)

III. Fill in the blanks:

29. \((3.2x^3) + (-1.7x^3) - (2x^3) - (-3.3x^3) = \)  

30. Degree of the polynomial \(5x^5\) is \(__\)
31. \( A = 6x^4 - 11x \), \( B = x^3 - 5x + 4 \) then \( A + B = \) _________
32. The product of any two polynomials is a _________
33. A, B and C are three polynomials and \( A \times (B + C) = A \times B + A \times C \) is called _________
34. \( (x^2 + 2x - 3)(-2x) = \) _________
35. For any two polynomials A and B, \( A + B = \) _________
36. Additive identity of polynomials is _________
37. _________ does not exist in polynomials.
38. \( (101)^2 = \) _________
39. Formula of \( a^3 + b^3 = \) _________
40. If \( ab + bc + ca = 0 \) then \( (a + b + c)^2 = \) _________
41. Simplified form of \( \frac{a^3 + b^3 + c^3 - 3abc}{a^2 + b^2 + c^2 - ab - bc - ca} = \) _________
42. The co-efficient of \( x \) in \( (x + a)(x + b)(x + c) \) is _________
43. \( (\sqrt{x} - \sqrt{y})^2 = \) _________
44. \( (a + b)^3 - a^3 - b^3 = \) _________
45. If \( a + b = c \) then \( a^3 + b^3 + 3abc = \) _________
46. \( (\sqrt{2} + 1)^3 = \) _________

IV. Matching :

<table>
<thead>
<tr>
<th>Group A</th>
<th>Group B</th>
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<tbody>
<tr>
<td>47. The value of 3x² when ( x = \sqrt{3} )</td>
<td>[ ]</td>
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<tr>
<td>48. Addition of polynomials</td>
<td>[ ]</td>
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<tr>
<td>49. Multiplication of polynomials</td>
<td>[ ]</td>
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<tr>
<td>50. ( A \times 1 = 1 \times A = A ). This is called</td>
<td>[ ]</td>
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<tr>
<td>51. For every polynomial ( A + 0 = 0 + A = A ) is called</td>
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