Mathematics – Class 6

Algebra

1. The value of the expression $\frac{n^2}{2}+\frac{n}{2}$ when n = 12 is
   A) 76 B) 74 C) 78 D) 72
ANS : C

2. If $\frac{7x}{3}-\frac{7}{6}$ is a polynomial, then the zero of the polynomial is
   A) $\frac{1}{2}$ B) $-\frac{1}{2}$ C) 0 D) – 2
ANS : A

3. If the zero of the polynomial in 'x' is $-\frac{5}{4}$, then the polynomial is
   A) 4x – 5 B) 5x – 4 C) 5x + 4 D) 4x + 5
ANS : C

4. If A = $-8x^2-6x+10$, then its value when 'x' $=\frac{1}{2}$ is
   A) 6 B) 4 C) 5 D) 7
ANS : C

5. The third degree polynomial among the following is
   A) $2x^{3-1}+3x^{2-1}+5$ B) $3x^{4-1}+2x^{3-1}+6x^{2-1}+8$
   C) $3x^{-2-1}+4x^{-2}+5$ D) $2x^{5-3}+3x^{4-3}+7$
ANS ; B

6. Among the following the expression which is not a monomial is
   A) $\frac{4a^3b^2c^5}{23}$ B) $-147\,x^3y^2$ C) $\frac{2}{7}x^{-2}y^5z$ D) x^3y^5z12
ANS : C

7. If , $x=\frac{a}{2}$ then the value of $4x^2+8x+18$ is
   A) a^2+2a+8 B) $a^2+3a+18$ C) $a^2+4a+18$ D) $a^2+5a+18$
ANS : C

8. The value of the expression $\frac{-26}{3}-\frac{13x}{27}$ when x = $\frac{9}{13}$ is
   A) – 8 B) – 10 C) – 9 D) – 11
ANS : B

9. Degree of the polynomial $p + q\,x^m + rx^{m+2} + 5x^{m+3} + x^{m+4}$ is

A) m B) m + 2 C) m + 3 D) m+ 4

ANS : C

10. If $\frac{n(n+1)(2n+1)}{6}$ represents sum of the squares of first 'n' natural numbers, then its value when n = 10 is

A) 365 B) 375 C) 395 D) 385

ANS : D

11. Degree of the polynomial $\frac{1}{2}x^5 + 3x^4 + 2x^3 + 3x^2 + 6$ is

A) 4 B) 3 C) 5 D) 2

ANS : C

12. Degree of the monomial $\frac{3}{5}x^2y^6z^7$ is

A) 15 B) 9 C) 8 D) 13

ANS : A

13. In a polynomial 3x + 5 where x = a + 2, then its value when a = 8 is

A) 25 B) 45 C) 35 D) 40

ANS : C

14. The sum of $\frac{3}{4}x^3, \frac{5}{6}x^3, -\frac{2}{3}x^3$ and $\frac{7}{2}x^3$ is

A) $\frac{12}{53}x^3$ B) $-\frac{53}{12}x^3$ C) $\frac{53}{12}x^3$ D) $-\frac{12}{53}x^3$

ANS : C

15. The simplified form of $3x^3 - 2x^2 - 8x - 6x^2 + 7x^3 + 9x + 8x^3 - 9x^2 + 6x$ is

A) $-18x^3 - 17x^2 + 7x$ B) $18x^3 - 17x^2 - 7x$

C) $18x^3 + 17x^2 - 7x$ D) $18x^3 - 17x^2 + 7x$

ANS : B

16. The ascending order of the polynomials $-3x^3 + 7x^2 - 9x^4 + 6x - 8$ is

A) $-8 + 6x + 7x^2 - 3x^3 + 9x^4$ B) $-8 - 6x - 7x^2 - 3x^3 - 9x^4$

C) $-8 + 6x + 7x^2 - 3x^3 - 9x^4$ D) $8 + 6x + 7x^2 + 3x^3 + 9x^4$

ANS : A

17. If A = – 7x – 3x – 5x and B = 9x + 3x + 2x, then A + B is

A) 2x B) – 2x C) – x D) – 3x

ANS : C

18. If , $\frac{1}{2}x - \frac{1}{3}x = A$ and $\frac{1}{3}x - \frac{1}{4}x = B$ then A – B is

A) $\frac{1}{12}x$ B) $-\frac{1}{12}x$ C) – 2x D) 0

ANS : A

19. The equivalent expression of $2x^3 - 3x^2 - 8x - 3$ is

A) $3x^3 - 5x^3 + 7x^2 - 5x^2 - 8x + 10x - 4 + 1$

B) $3x^3 - x^3 - 5x^2 + 2x^2 - 9x + x - 7 + 4$

C) $4x^3 - 6x^2 - 3x^3 + 3x^2 + x^2 - 9x + 3x + 6 - 3$

D) $4x^3 - 2x^3 + 3x^2 - 5x^2 - 8x + 6x + 4 - 1$

ANS : A

20. The descending order of $4x^2 - 9x^3 + 3x^2 - 9x^4 + 3x^3 - 9x^2 + 6x - 3x + 5 - 3$ is

A) $-9x^4 + 6x^3 - 2x^2 + 3x + 2$ B) $-9x^4 - 6x^3 + 2x^2 - 3x + 2$

C) $-9x^4 - 6x^3 - 2x^2 + 3x + 2$ D) $-9x^4 + 6x^3 - 2x^2 + 3x - 2$

ANS : C

21. If $-\frac{7}{5}x^3 + \frac{3}{4}x^3 + \frac{7}{2}x^3 + \frac{9}{3}x^3$ is added to , then the $\frac{9x^3}{60}$ result is

A) $-6x^3$ B) $6x^3$ C) $60x^3$ D) $16x^3$

ANS : B

22. If $2x - 3x + 5x = P$, $Q = -8x + 3x + 9x$ and $R = -8x - 6x - 7x$, then $(P + Q) - R$ is

A) 27x B) 28x C) 29x D) 26x

ANS : C

23. If $A = -3x^3 - 2x^3 + 4x^2 - 2x^2$, $B = -3x^2 + 5x^2 - 8x + 3x$ and $C = 2x - 9x - 7 + 8$,then A + B + C in simplified form is

A) $-5x^3 + 4x^2 - 12x + 1$ B) $5x^3 - 3x^2 - 12x + 1$

C) $-5x^3 - 4x^2 - 12x - 1$ D) $5x^3 + 3x^2 + 12x + 1$

ANS : A

24. If $4x^3y^2 + 3x^2y^3 - 8x^2y^5$ is added $-9x^2y^3 + 6x^2y^5 - 9x^3y^4$, then the result is

A) $4x^3y^2 + 5x^2y^3 - 2x^2y^5 - 9x^3y^4$ B) $4x^3y^2 - 6x^2y^3 - 2x^2y^5 - 9x^3y^4$

C) $4x^3y^2 - 6x^2y^3 + 2x^2y^5 - 9x^3y^4$ D) $-4x^2y^2 - 6x^2y^3 - 2y^2y^5 - 9x^3y^4$

ANS : B

25. If $0.5x^3 + 1.85x^3 + 2.96x^3 - 4.71x^3$ is added to $(1.25x^4 - 2.5x^5 + 3.6x^4 - 4.71xD)$, then the result is

A) $0.6x^3 + 2.36x^4$ B) $-0.6x^3 - 2.36x^4$

C) $0.6x^3 - 2.36x^4$ D) $-0.6x^3 + 2.36x^4$

ANS : C

26. If $B = -9x^2 + 3x - 7$, then the additive inverse of B is

A) $9x^2 - 3x - 7$ B) $9x^2 - 3x + 7$ C) $-9x^2 - 3x - 7$ D) $-9x^2 + 3x + 7$

ANS : B

27. If $A = \frac{-3x^2}{4} + \frac{2}{3}x + 7$ and $B = \frac{1}{4}x^2 - \frac{1}{3}x + 8$, then A – B is

A) $x^2 - x + 1$ B) $-x^2 - x - 1$ C) $-x^2 + x - 1$ D) $x^2 + x + 1$

ANS : C

28. If $P = 2x^3 - 3x^2 - 5x + 6$ and $Q = \frac{1}{3}x^3 - \frac{3}{4}x^2 - \frac{5}{2}x + \frac{7}{3}$, then Q – P is

A) $\frac{5x^3}{3} + \frac{9x^2}{4} + \frac{5x}{2} - \frac{11}{3}$ B) $\frac{-5x^3}{3} - \frac{9x^2}{4} + \frac{5x}{2} - \frac{11}{3}$

C) $\frac{-5x^3}{3} - \frac{9x^2}{4} - \frac{5x}{2} - \frac{11}{3}$ D) $\frac{5x^3}{3} + \frac{9x^2}{4} + \frac{5x}{2} - \frac{11}{3}$

ANS : B

29. If $A = -\frac{3}{2}x^3 - \frac{9}{7}x^2 + \frac{6x}{7} + 2$ and A + B = 0, then polynomial B is

A) $\frac{-3x^3}{2} - \frac{9}{2}x^2 + \frac{6x}{7} + 2$ B) $\frac{3x^3}{2} + \frac{9}{2}x^2 + \frac{6x}{7} + 2$

C) $\frac{-3x^3}{2} - \frac{9}{2}x^2 - 6x - 2$ D) $\frac{3x^3}{2} + \frac{9}{7}x^2 - \frac{6x}{7} - 2$

ANS : D

30. If $A = 2x^3 - 9x^2 - 6x + 7$ and $A + B = 5x^3 - 6x^2 - 8x + 9$, then the polynomial

l) (A + B) – A is A) $3x^3 - 3x^2 - 2x + 2$ B) $3x^3 + 3x^2 - 2x + 2$

C) $3x^3 + 3x^2 + 2x + 2$ D) $-3x^3 - 3x^2 - 2x + 2$

ANS : B

31. If $A = 4x^3 - 9x^2 - 9x - 8$ and $A - B = -2x^3 - 8x^2 - 6x - 2$, then the polynomial B = A – (A – B) is

A) $6x^3 - x^2 - 3x - 6$ B) $6x^3 + x^2 + 3x + 6$

C) $6x^3 + x^2 + 3x - 6$ D) $-6x^3 - x^2 - 3x - 6$

ANS: A

32. Given $A = 2x^3 - 3x^2 + 6x + 7$ and $B = 4x^3 - 9x^2 - 3x + 7$, If C, D are additive inverses of A and B, then D – C is

A) $-2x^3 + 6x^2 + 9x$ B) $-2x^3 + 5x^2 + 9x$

C) $-2x^3 - 6x^2 + 9x$ D) $-2x^3 - 6x^2 - 9x$

ANS : A

33. If $A - B = 2x^3 - 3x^2 + 8x - 7$ and $B = 5x^3 - 9x^2 + 6x - 8$, where A = (A – B) + B, then the polynomial A is

A) $7x^3 - 12x^2 + 14x + 18$ B) $7x^3 - 12x^2 + 14x - 15$

C) $7x^3 - 12x^2 - 14x + 15$ D) $-7x^3 + 12x^2 - 14x - 15$

ANS : B

34. Given and C + A = 0. If is added to A, then the result is

A) $x^2 - x + 1$ B) $-x^2 - x - 1$ C) $x^2 + x - 1$ D) $x^2 - x + 1$

ANS : C

35. If $A = 7x^3 - 2x^2 - 9x + 6$, $B = 2x^3 - 8x^2 + 3x - 5$, $C = 2x^3 - 4x^2 - 8x + 7$, and $D = -3x^3 - 5x^2 + 6x + 7$, then $(A - C) - (B - D)$ is

A) $5x^2 - 2x - 11$ B) $5x^2 + 2x + 11$ C) $5x^2 - 2x + 11$ D) $-5x^2 - 2x - 11$

ANS : B

36. . Which out of the following are expressions with numbers only?

(A) $(7 \times 20) - (5 \times 10) - 45$ (B) 3x (C) $(7 \times 20) - 8z$ (D) 5 – 5n

ANS : (A)

37. . Perimeter of the square, whose each side is 'n' cm is

(A) 4n (B) 2n (C) 3n (D) None of these

ANS (A)

38. Give expression for 25 added to r.

(A) 25 + r (B) 25 – r (C) 25r (D) None of these

ANS (A)

39. Number of matchsticks required to make a pattern of "U"

(A) 4 (B) 5 (C) 3 (D) 6

ANS : (C)

40. The _____ of the variable in an equation which satisfies the equation is called a solution to the equation.

(A) value (B) term (C) factor (D) None of these

ANS : (A)

41. . Choose a value of 'a' that satisfies the equation 6a = -30.

(A) 5 (B) 30 (C) -5 (D) 10

ANS : (C)

42. Perimeter of an _____ = 3 × length of a side

(A) equilateral triangle (B) isosceles triangle

(C) right-angled triangle (D) None of these

ANS : (A)

43. Which of the following is an equation?

(A) $2x + 3 = 5$ (B) $2x + 3 < 5$ (C) $2x + 3 > 5$ (D) $2x + 3 \leq 5$

ANS : (A)

44. The expression for the statement: “y multiplied by 10 and then 7 added to product” is

(A) $7y – 10$ (B) $10y – 7$ (C) $10y + 7$ (D) None of these

ANS : (C)

45. An _____ is a condition on a variable.

(A) expression (B) equation (C) equal (D) none of these

ANS : (B)

46. Take Meena’s present age to be y years, what will be her age 5 years from now?

(A) y+5 (B) 5/y (C) y-5 (D) 5y

ANS : (A

47. Which of the following is the perimeter of a regular hexagon of side 's' units?

(A) 6 s units (B) 12 s units (C) 6 s2 sq units (D) -6 s units

ANS : (A)

48. . Ramu's father is thrice as old as Ramu. If father's age is 45 years, how old is Ramu?

(A) 45 years (B) 30 years (C) 15 years (D) 10 years

ANS : (C)

49. . Which of the following does 2n -1 represent?

(A) 1 subtracted from the product of n and 2.

(B) The difference of two times n and 2.

(C) 2n added to 1.

(D) n subtracted from 2.

ANS : (A)

50. . Perimeter of an equilateral triangle, whose each side is 'x' unit is

(A) 4x (B) 2x (C) 3+x (D) 3x

ANS : (D)

51. Pick out the solution from the values given in the bracket next to each equation. p – 5 = 5 (0, 10, 5 – 5)

(A) 0 (B) 5 (C) -5 (D) 10

ANS : (D)

52. The side of an equilateral triangle is shown by l. Express the perimeter of the equilateral triangle using l.

(A) 3l (B) 2l (C) l (D) None of these

ANS : (A)

53 Pick out the solution from the values given in the bracket next to each equation. x + 4 = 2 (– 2, 0, 2, 4)

(A) -2 (B) 4 (C) 2 (D) 0

ANS : (A)

54. A number is multiplied by 6 and 12 is added to the product. The result is 84. What is the number?

(A) -12 (B) 72 (C) 12 (D) -72

ANS : (C)

55. Find the length of a side of an equilateral triangular garden whose perimeter is 66 m.

(A) 66 m (B) 11 m (C) 3 m (D) 22 m

ANS : (D)

56. What is the method of finding a solution by trying out various values for the variable called?

(A) Error method (B) Trial and error method

(C) Testing method (D) Checking method

ANS : (B)

57. Number of matchsticks required to make a pattern of "A"

(A) 4 (B) 3 (C) 6 (D) 5

ANS : (B)

58. A basket has x mangoes, how many mangoes are there in 5 baskets?

(A) 5 (B) 5x (C) 6x (D) x

ANS : (B)

59. What do literals usually represent?

(A) Known quantities (B) Variables (C) Constants (D) Depends on the problem

ANS : (B)

60. The rule, which gives the number of matchsticks required to make the matchstick pattern L, is

(A) 2 n (B) 3 n (C) 4n (D) 5 n.

Ans: (A)

61. The rule, which gives the number of matchsticks required to make the matchstick pattern C, i

(A) 2 n (B) 3 n (C) 4 n (D) 5 n.

Ans: (B)

62. The rule, which gives the number of matchsticks required to make the matchstick pattern F, is

(A) 2 n (B) 3 n (C) 4 n (D) 5 n.

Ans: (C)

63. The rule, which gives the number of matchsticks required to make the matchstick pattern U, is

(A) 2 n (B) 3 n (C) 4 n (D) 5 n.

Ans: (B)

64. The rule, which gives the number of matchsticks required to make the matchstick pattern V, is

(A) 2 n (B) 3 n (C) 4 n (D) 5 n.

Ans: (A)

65. The rule, which gives the number of matchsticks required to make the matchstick pattern A, is

(A) 2 n (B) 3 n (C) 4 n (D) 5 n.

Ans: (B)

66. The rule, which gives the number of matchsticks required to make the matchstick pattern [], is

(A) 2 n (B) 3 n (C) 4 n (D) 5 n

Ans: (C)

67. The rule, which gives the number of matchsticks required to make the matchstick pattern ≅, is

(A) 2 n (B) 3 n (C) 4 n (D) 5 n.

Ans: (A)

68. The rule, which gives the number of matchsticks required to make the matchstick pattern E. is

(A) 2 n (B) 3 n (C) 4 n (D) 5n.

Ans: (D)

69. The rule, which gives the number of matchsticks required to make the matchstick pattern A, is

(A) 3 n (B) An (C) 5 n (D) 6 n.

Ans : (C)

70. The rule, which gives the number of matchsticks required to make the matchstick pattern A, is

(A) 3 n (B) 4 n (C) 5 n (D) 6 n.

Ans: (A)

71. The rule, which gives the number of matchsticks required to make the matchstick pattern S, is

(A) 3 l (B) 4 n (C) 5 n (D) 6 n.

Ans: (C)

72. The side of a square is l. Its perimeter is

(A) 3l (B) 2l (C) 4l (D) 6l

Ans: (C)

73. The side of an equilateral triangle is l. Its perimeter is

(A) l (B) 2l (C) 3l (D) 6l.

Ans: (C)

74. The side of a regular pentagon is l. Its perimeter is

(A) 3l (B) 6l (C) 4l (D) 5l

Ans: (D)

75. The side of a regular hexagon is l. Its perimeter is

(A) l (B) 2l (C) 3l (D) 6l.

Ans: (D)

76. The length of an edge of a cube is l. The total length of its edges is

(A) 3l (B) 4l (C) 6l (D) 12l.

Ans: (D)

77. The radius of a circle is r. Its diameter is

(A) 2r (B) 4r (C) 3r (D) 6r.

Ans: (A)

78. Which of the following is an expression with numbers only?

(A) x + 1 (B) 2x (C) 1 – x (D) 3.

Ans: (D)

79. Which of the following is an expression with numbers only?

(A) 2(4 – 3) + 5 × 6 (B) 2 × 3 – 4x (C) 4 × 5 – 10 × 2 – 25 + x (D) x8

Ans: (A)

80. Which of the following is not an expression with numbers only?

(A) 2 × (3 + 4) (B) (2 + 3) × 4 (C) 2 × 3 + 4 × 5 (D) 2x + 1.

Ans: (D)

81. The expression for '1 added top' is

(A) P + 1 (B) p – 1 (C) 1 – p (D) – 1 – P

Ans: (A)

82. The expression for ' 1 subtracted from p' is

(A) p – 1 (B) p + 1 (C) 1 – p (D) – 1 – p.

Ans: (A)

83. The expression for ‘p multiplied by 2’ is

(A) p + 2 (B) P – 2 (C) $\frac{P}{2}$ (D) 2p

Ans: (D)

84. The expression for ‘p divided by 2’ is

(A) $\frac{P}{2}$ (B) 2p (C) P + 2 (D) p – 2.

Ans: (A)

85. The expression for ‘ 1 subtracted from -p’ is

(A) -P-1 (B) p – 1 (C) 1 – p (D) 1 + p.

Ans: (A)

86. The expression for ‘ 1 added to -p’ is

(A) – p + 1 (B) – p – 1 (C) p + 1 (D) p – 1.

Ans: (A)

87. The expression for ‘p multiplied by – 2’ is

(A) -2p (B) – $\frac{P}{2}$ (C) p – 2 (D) – p – 2.

Ans: (A)

88. The expression for ‘ -p multiplied by 2’ is

(A) -2p (B) – $\frac{P}{2}$ (C) p – 2 (D) – p – 2.

Ans: (A)

89. The expression for' -p divided by 2' is

(A) $-\frac{P}{2}$ (B) -2p (C) -p + 2 (D) – p – 2.

Ans: (A)

90. The expression for ' 1 added to 2p' is

(A) 2p + 1 (B) 2p – 1 (C) 1 – 2p (D) – 1 – 2p.

Ans: (A)

91. The expression for ' 1 subtracted from 2p' is

(A) 2p – 1 (B) 2p + 1 (C) 1 – 2p (D) -2p -1.

Ans: (A)

92. The expression for added' is ' 2 times x to which 1 is

(A) 2x + 1 (B) x + 2 (C) 1 – 2x (D) 2x – 1.

Ans: (A)

93. The expression for '2 times x from which 1 is subtracted' is

(A) 2x – 1 (B) 2x + 1 (C) x – 2 (D) x + 2.

Ans: (A)

94. The expression for 'x is divided by 2 and the result is added to 1' is

(A) $1 + \frac{x}{2}$ (B) $1 - \frac{x}{2}$ (C) 2 + x (D) 2 – x.

Ans: (A)

95. The expression for 'x is divided by – 2 and the result is added to 1' is

(A) $1 - \frac{x}{2}$ (B) $1 + \frac{x}{2}$ (C) x2 – 1 (D) $-1 - \frac{x}{2}$

Ans: (A)

96. If Apala's present age is x years, what will be her age in years after 20 years from now?

(A) x + 20 (B) x – 20 (C) $\frac{x}{20}$ (D) 20x.

Ans: (A)

97. If Meenu's present age is x years, what was her age in years, 10 years back?

(A) x – 10 (B) 10 – x (C) – x – 10 (D) 10x.

Ans: (A)

98. If the age of Hari Kishan is two times the age of Manish (which is x years), then the age of Hari Kishan, in years, is

(A) $\frac{x}{2}$ (B) 2x (C) x + 2 (D) x – 2.

Ans: (B)

99. The salary of Hari Kishan is two times the salary of Manish (which in Rs. x), then the salary of Hari Kishan, in rupees, is

(A) 2x (B) $\frac{x}{2}$ (C) x + 2 (D) x – 2.

Ans: (A)

100. Which of the following is an equation in a variable?

(A) $\frac{10}{2} = 5$ (B) $2 \times 3 + 2 \times 1 = 8$ (C) $2 \times 4 = 8$ (D) $3p = 12$.

Ans: (D)