

MATHEMATICS

ALGEBRAIC EXPRESSIONS

1. Simplify : $81a^2b^2c^2 + 64a^6b^2 - 144a^4b^2c$

(A) $a^2b^2[9c + 8a^2]^2$

(B) $-a^2b^2[9c - 8a^2]^2$

(C) $a^2b^2[9c - 8a^2]^2$

(D) None

ANS . C

2. Simplify : $(a^2 + b^2 + 2ab) + (a^2 + b^2 - 2ab)$

(A) $-2a^2 + 2b^2$

(B) $2a^2 - 2b^2$

(C) $2a^2 + 2b^2$

(D) $(2a^2 - 2b^2)$

ANS . C

3. Simplify : $2x - [3y - \{2x - (y - x)\}]$

(A) $5x + 4y$

(B) $5x - 4y$

(C) $-5x - 4y$

(D) $-5x + 4y$

ANS . B

4. $-m - [m + \{m + n - 2m - (m - 2)\} - n] =$

(A) $2n$

(B) $3n$

(C) $-2n$

(D) $-3n$

ANS . C

5. Simplify : $85 - [12x - 7(8x - 3) - 2\{10x - 5(2 - 4x)\}]$

(A) $44 + 104x$

(B) $-44 + 104x$

(C) $44 - 104x$

(D) $-44 - 104x$

ANS . A

6. Subtract $2x^3 + x^2 - 4x - 1$ from

$5x^3 + 5x^2 + 9$

(A) $-3x^3 + 4x^2 + 4x + 10$

(B) $3x^3 + 4x^2 + 4x + 10$

(C) $3x^3 + 4x^2 + 4x - 10$

(D) $-(3x^3 + 4x^2 + 4x + 10)$

ANS. B

7. $a^4 + 4a^2b^2 + b^4$ is more than $a^4 - 8a^2b^2 + b^4$ by -

- (A) $12a^2b^2$
- (B) $-12a^2b^2$
- (C) $2a^4 + 2b^4$
- (D) None

ANS . A

8. The value of $(x + 2y + 2z)^2 + (x - 2y - 2z)^2$ is -

- (A) $2x^2 + 8y^2 + 8z^2$
- (B) $2x^2 + 8y^2 + 8z^2 + 8xyz$
- (C) $2x^2 + 8y^2 + 8z^2 - 8yz$
- (D) $2x^2 + 8y^2 + 8z^2 + 16yz$

ANS . D

9. Simplify : $xy - [yz - zx - \{yx - (3y - xz) - (xy - zy)\}]$

- (A) $xy + 2zx + 3y$
- (B) $xy - 2zx - 3y$
- (C) $3xy + 2zx - 3y$
- (D) $xy + 2zx - 3y$

ANS . D

10. Simplify : $-3(a + b) + 2(2a - b) + 4a - 5$

- (A) $5(a - b + 1)$
- (B) $5(a + b + 1)$
- (C) $5(a + b - 1)$
- (D) $5(a - b - 1)$

ANS . D

11. If $a = -2$, $b = 3$ and $c = 4$, then the value of $a^3 + b^3 + 3a^2c - 4bc^3$ is -

- (A) 107
- (B) -107
- (C) 701
- (D) -701

ANS . D

12. If $P = a^3 - 4b^3 + 3a^2b$, $Q = -4a^3 + 13a^2b + 7b^3$,

$$R = -4a^2b + 8b^3 + 3a^3 \quad \text{and} \quad S = 12a^2b - 5b^3 + 9a^3$$

and $P - Q + R - S$ is equal to -

- (A) $-a^3 + 3b^3 - 26a^2b$
- (B) $a^3 - 2b^3 + 26a^2b$
- (C) $a^3 + 2b^3 - 26a^2b$
- (D) $-a^3 - 2b^3 - 26a^2b$

ANS . A

13. Simplify :

$$7 - [3x + \{-2y + 3z - (3y + 5z) + 8\} - (3y^2 + 7x) + 9]$$

(A) $-1 + 4x - 3y - 3z + 3y^2$

(B) $-10 + 4x + 5y + 2z + 3y^2$

(C) $-10 - 4x + 5y - 2z + 3y^2$

(D) $-1 + 14x - 5y + 2z + 3y^2$

ANS . B

14. If $m = \frac{3x-4}{5}$; $n = \frac{x-7}{3}$ and $3(m+n) = 13$ then find the value of x -

(A) 6

(B) 8

(C) 10

(D) 16

ANS . B

15. If $P = x + 1$ and $\frac{4P-3}{2} - \frac{3x+2}{5} = \frac{3}{2}$, then the value of x is -

(A) 1

(B)

(C) 2

(D) -1

ANS . A

16. If $\frac{5x}{4} + \frac{6-x}{8} = \frac{6(x+3)}{3} - \frac{1}{6}$, then x =

(A) $x = -\frac{121}{22}$

(B) $x = \frac{121}{12}$

(C) $x = \frac{212}{21}$

(D) $x = -\frac{122}{21}$

ANS , D

17. If the present age of Jacob's father is three times that of Jacob, after five years, sum of their ages would be 70 years, then the present age of Jacob's father is -

(A) 39 years

(B) 45 years

(C) 54 years

(D) 60 years

ANS . B

18. The population of town A is 4800 more than town B. If 3100 people move from town B to town A, the population of town A will be 11 times that of town B. The original total population of the two towns is -

(A) 12580

(B) 12780

(C) 13200

(D) 13300

ANS . C

19. If the sum of two numbers is 184 and one-third of the smaller number exceeds one-seventh of the larger number by 8, then the larger number is -

- (A) 112
- (B) 72
- (C) 104
- (D) 80

ANS . A

20. A person has only 25 paise and 50 paise coins. In total he has 40 coins and the value of them is Rs. 12.50. Find the number of 50 paise coins he has -

- (A) 10
- (B) 15
- (C) 25
- (D) 20

ANS . A

21. Value of x in the equation $x - \left(\frac{4x-27}{3} - 3 \right) = 2x - \frac{3x-4}{7}$ is -

- (A) 2
- (B) 4
- (C) 6
- (D) 8

ANS . C

22. Simplify : $81a^2b^2c^2 + 64a^6b^2 - 144a^4b^2c$

- (A) $a^2b^2[9c + 8a^2]^2$
- (B) $-a^2b^2[9c - 8a^2]^2$
- (C) $a^2b^2[9c - 8a^2]^2$
- (D) None

ANS . C

- 23 The degree of $3x^2 - 9$ is

- (A) 1
- (B) 2
- (C) 3
- (D) 4

ANS . B

- 24 The expression $x + y + 2$ is

- (A) Monomial
- (B) Binomial
- (C) Trinomial
- (D) None of these

ANS . C

- 25 The expression xyz is

- (A) Monomial
- (B) Binomial
- (C) Trinomial
- (D) None of these

ANS . A

- 26 Add $5a^2b$, $-8a^2b$ and $7a^2b$

- (A) $-10a^2b$
- (B) $4a^2b$
- (C) $20a^2b$
- (D) $10a^2b$

ANS . B

- 27 Subtract $(a^2 + b^2 - 2ab)$ from $(a^2 + b^2 + 2ab)$

(A) $-4ab$ (B) $-2ab$ (C) $4ab$ (D) $2ab$
 Sol. $(a^2 + b^2 + 2ab) - (a^2 + b^2 - 2ab) = a^2 + b^2 + 2ab - a^2 - b^2 + 2ab = 4ab$
 ANS . C

28 The degree of a polynomial $ax^5 - bx^4 + c$ is
 (A) 9 (B) 5 (C) 4 (D) 1
 ANS . B

29 The expression $4(x-2) + 3(x-1)$ is equal to
 (A) $7x - 11$ (B) $7x + 11$ (C) $6x - 10$ (D) $6x + 10$
 Sol. $4x - 8 + 3x - 3 = 7x - 11$
 ANS . A

30 Which expression is equal to $5(2x + 1 - x - 4)$?
 (A) $9x - 3$ (B) $5x - 15$ (C) $5x - 3$ (D) $5x + 25$
 Sol. $5(x - 3) = 5x - 15$
 ANS . B

31 Which one of the following is equivalent to the expression $(2^5)(2^6)$?
 (A) 2048 (B) 230 (C) 411 (D) 430
 ANS . A

32 A tanker contains 500 litres of water. Due to a small hole in the tanker, the quantity of water is decreasing at the rate of 9 litres every hour. What will be the quantity of water in the tank after 10 hours?
 (A) 410 litres (B) 491 litres (C) 400 litres (D) 90 litres
 ANS . A

33 Subtract the sum of $(8a - 6a^2 + 9)$ and $(-10a - 8 + 8a^2)$ from -3 is
 (A) $2a^2 - 2a - 2$ (B) $2a^2 - 2a + 4$ (C) $-2a^2 + 2a - 4$ (D) $-2a^2 + 2a - 2$
 Sol. $-3 - (8a - 6a^2 + 9 - 10a - 8 + 8a^2) = -2a^2 + 2a - 4$
 ANS . C

34 An expression is taken away from $3x^2 - 4y^2 + 5xy + 20$ to obtain $-x^2 - y^2 + 6xy + 20$, then the expression is
 (A) $4x^2 - 3y^2 - xy$ (B) $2x^2 - 5y^2 + xy + 40$
 (C) $3y^2 - xy - 4x^2$ (D) $4x^2 + 3y^2 + xy$
 Sol. $(3x^2 - 4y^2 + 5xy + 20) + X = -x^2 - y^2 + 6xy + 20$
 $\Rightarrow X = 4x^2 - 3y^2 - xy$
 ANS . A

35 By how much is $a^4 + 4a^2b^2 + b^4$ more than $a^4 - 8a^2b^2 + b^4$?
 (A) $12a^2b^2$ (B) $-12a^2b^2$ (C) $2a^4 + 2b^4$ (D) $10a^2b^2$
 Sol. $a^4 + 4a^2b^2 + b^4 - (a^4 - 8a^2b^2 + b^4) = 12a^2b^2$
 ANS . A

- 36 Simplify $(a^3 - 2a^2 + 4a - 5) - (-a^3 - 8a + 2a^2 + 5)$
 (A) $2a^3 + 7a^2 + 6a - 10$ (B) $2a^3 + 7a^2 + 12a - 10$
 (C) $2a^3 - 4a^2 + 12a - 10$ (D) $2a^3 - 4a^2 + 6a - 10$
 Sol. $a^3 - 2a^2 + 4a - 5 + a^3 + 8a - 2a^2 - 5 = 2a^3 - 4a^2 + 12a - 10$
 ANS . C
- 37 Simplify the following expression $x(y - z) - y(z - x) - z(x - y)$
 (A) $2x(y - z)$ (B) $2y(z - x)$ (C) $2x(z - y)$ (D) None of these
 Sol. $xy - xz - yz + xy - xz + yz = 2x(y - z)$
 ANS . A
- 38 The coefficient of x^2 in the expression $3x^3 - 7x^2 + 5x + 9$ is
 (A) 3 (B) 7 (C) -7 (D) 5
 ANS . C
- 39 Subtract $(2a - 3b + 4c)$ from the sum of $(a + 3b - 4c)$, $(4a - b + 9c)$ and $(-2a + 3c - b)$
 (A) $a - 4b + 4c$ (B) $a + 4b - 4c$ (C) $-a + 4b + 4c$ (D) $a + 4b + 4c$
 Sol. $(a + 3b - 4c) + (4a - b + 9c) + (-2a + 3c - b) - (2a - 3b + 4c)$
 $= (3a + b + 8c) - (2a - 3b + 4c) = 3a + b + 8c - 2a + 3b - 4c = a + 4b + 4c$
 ANS . D
- 40 If the value of $2x^3 - 2x^2 + x - a$ equals to 5, when $x = 2$, then the value of 'a' is
 (A) 4 (B) 5 (C) 3 (D) 6
 Sol. $2(2)^3 - 2(2)^2 + 2 - a = 5 \Rightarrow 2(8) - 2(4) + 2 - a = 5 \Rightarrow a = 5$
 ANS . B
- 41 The value of $(0.05)^3$ is
 (A) 0.000125 (B) 0.00125 (C) 0.0125 (D) 0.125
 ANS . A
- 42 The value of $7.75 \div 0.25$ is
 (A) 31 (B) 0.0031 (C) 0.31 (D) 3.1
 ANS . A
- 43 Simplify –
 (A) $4xy$ (B) $8x^2 + 18y^2$ (C) $8xy$ (D) $24xy$
 Sol. $(4x^2 + 12xy + 9y^2) - (4x^2 - 12xy + 9y^2) = 24xy$
 ANS . D
- 44 The product of $(a - b)(a + b)(a^2 + b^2)$ is
 (A) $a^2 - b^2$ (B) $a^5 - b^3$ (C) $a^4 - b^4$ (D) $a^2 + b^4$
 Sol. $(a^2 - b^2)(a^2 + b^2) = a^4 - b^4$
 ANS . C
- 45 What is the missing term in the following product ?
 $(2a^3 - 3)(5a^3 - 2) = 10a^6 + \dots + 6$

ANS . B (A) $19a^3$ (B) $-19a^3$ (C) $16a^3$ (D) $-16a^3$

46 The value of $n^3 + 5n^2 + 5n - 2$ when $n = -2$ is
(A) 16 (B) 0 (C) -40 (D) 10

Sol. $(-2)^3 + 5(-2)^2 + 5(-2) - 2 = 0$

ANS . B

47 The value of $9x^2 + 49y^2 - 42xy$ when $x = 15$ and $y = 3$ is
(A) 636 (B) 576 (C) 456 (D) 386

Sol. $9x^2 + 49y^2 - 42xy = (3x - 7y)^2 = (3(15) - 7(3))^2 = (45 - 21)^2 = 576$

ANS . B

48 Simplify : $4st(s - t) - 6s^2(t - t^2) - 3t^2(2s^2 - s) + 2st(s - t)$
(A) $-st^2$ (B) $-2st^2$ (C) $-3st^2$ (D) $-4st^2$

Sol. $4s^2t - 4st^2 - 6s^2t + 6s^2t^2 - 6s^2t^2 + 3st^2 + 2s^2t - 2st^2 = -3st^2$

ANS . C

49 Divide $2x^3 - 4x^2$ by $2x$
(A) $x^2 - 2x$ (B) $-x^2 + 4$ (C) $-x^2 + 4x$ (D) $x^2 + 4$

Sol. $\frac{2x^3}{2x} - \frac{4x^2}{2x} = x^2 - 2x$

ANS . A

50 Divide $-15x^5y^4z^3 + 10x^4y^4z^4 + 20x^3y^2z$ by $5xyz$
(A) $-3x^4y^3z^2 - 2x^3y^3z^3 + 4x^2y$ (B) $-3x^4y^3z^2 + 2x^3y^3z^3 + 4x^2y$
(C) $-3x^4y^3z^2 + 2x^3y^3z^3 - 4x^2y$ (D) $3x^4y^3z^2 - 2x^3y^3z^3 - 4x^2y$

Sol. $\frac{-15x^5y^4z^3}{5xyz} + \frac{10x^4y^4z^4}{5xyz} + \frac{20x^3y^2z}{5xyz} = -3x^4y^3z^2 + 2x^3y^3z^3 + 4x^2y$

ANS . B

51. 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

52. 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

53. 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

54. 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

55. 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

56. Among the following the expression which is not a monomial is

- (A) $\frac{4a^3b^2c^5}{23}$ (B) $-147x^3y^2$ (C) $\frac{2}{7}x^{-2}y^5z$ (D) $x^3y^5z^{12}$

ANS . C

57. 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

58. 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

59. Degree of the polynomial $p + qx^m + rx^m + 2 + 5x^m + 3 + x^m + 4$ is

- (A) m (B) $m + 2$ (C) $m + 3$ (D) $m + 4$

ANS . C

60. 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

61. 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

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

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

ANS . A

63. 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

64. 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

65. 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

66 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

67 If $A = -7x - 3x - 5x$ and $B = 9x + 3x + 2x$, then $A + B$ is

(A) $2x$

(B) $-2x$

(C) $-x$

(D) $-3x$

ANS . C

68 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

69. 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

70 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

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

(A) $-6x^3$

(B) $6x^3$

(C) $60x^3$

(D) $16x^3$

ANS . B

72 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

73 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

74. 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

75. If $0.5x^3 + 1.85x^3 + 2.96x^3 - 4.71x^3$ is added to $(1.25x^4 - 2.5x^5 + 3.6x^4 - 4.71x^4)$, 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

76. 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

77. 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

78. 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

79. 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

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

81. 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

82. 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

83. 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

84. Given $C = \frac{-5}{6}x^2 - \frac{7}{6}x + \frac{3}{2}$ and $C + A = 0$. If $B = \frac{x^2}{6} - \frac{1}{6}x + \frac{1}{2}$ 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

85. 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

86. The value of $(3p - (A)3p + 5)$ is _____

(A) $9p^2 - 12p + 5$

(B) $9p^2 + 12p - 5$

(C) $4p^2 + 12p - 5$

(D) $9p^2 - 12p - 5$

ANS . D

87. The value of $(t/2 + 6)(t/3 - (B))$ is _____

(A) $\frac{t^3}{4} + \frac{3t^2}{2} - 12$

(B) $\frac{t^4}{4} + \frac{3t}{2} - 18$

(C) $\frac{t^3}{4} - \frac{3t^2}{2} + 18$

(D) $\frac{t^3}{4} + \frac{3t^2}{2} - 18$

ANS . B

88. The value of $(497)^2$ is ____ (using the identity)

(A) 247006

(B) 247009

(C) 257006

(D) 2578009

ANS . B

89. The expansion of is $\left(\frac{1}{2}x^2y + \frac{1}{3xy^2}\right)^2$ _____

(A) $\frac{1}{4}x^4y - \frac{x}{3y} + \frac{1}{9x^2y^4}$

(B) $\frac{1}{4}x^4y^2 + \frac{x}{3y} + \frac{1}{9x^2y^4}$

(C) $\frac{1}{4}x^4y^2 - \frac{x}{3y} - \frac{1}{9x^2y^4}$

(D) $x^4y^2 + \frac{1}{xy} - \frac{1}{9x^2y^4}$

ANS . B

90. The expansion of $(3.2d - 5f)^2$ is _____

(A) $10.24d^2 + 32df + 25f^2$

(B) $10.24d^2 - 25f^2 + 32df$

(C) $10.24d^2 - 32df + 25f^2$

(D) $10.24d^2 - 32df - 25f^2$

ANS . C

91. Without actual multiplication, the value of (1001×1007) is _____

(A) 10008007

(B) 1080007

(C) 10080007

(D) 1008007

ANS . D

92. Without actual multiplication, the value of $(79.01 \times 79.01 + 2 \times 79.01 \times 20.99 + (20.99 \times 20.99))$ is = _____
 (A) 10009 (B) 1000.05 (C) 10000 (D) 10007

ANS . C

93. If $(4x - 3 - 2x + 7)(-3x - 4 + 5x + (A))$ is simplified, then the answer is _
 (A) $4x^2 + 2x - 12$ (B) $14x^2 - 22x + 12$ (C) $4x^2 + 2x + 12$ (D) $-14x^2 - 2x - 12$

ANS . A

94. If $(x + 7)(x + (C)) + (x - (B))(x + 5)$ is simplified, then the answer is _____
 (A) $2x^2 + 13x + 11$ (B) $2x^2 - 13x + 11$ (C) $2x^2 - 13x - 11$ (D) $-2x^2 - 13x - 11$

ANS . A

95. $(12x^3 + (A)^2 + (6x^3 - (C))^2 =$ _____
 (A) $180x^6 - 12x^3 + 10$ (B) $180x^6 + 12x^3 + 10$ (C) $180x^6 - 12x^3 - 10$ (D) $180x^6 + 12x^3 - 10$

ANS . A

96. If $A = 100^2 + 100(5 + (C)) + 5 \times 3$ and $B = 100^2 - 100(8 + (C)) + 8 \times 3$, then $A + B =$ _____
 (A) 19735 (B) 19736 (C) 19739 (D) 19732

ANS . C

97. For the product $\left(\frac{3}{5}p + \frac{1}{3}\right)\left(\frac{3}{5}p - \frac{1}{3}\right)$ is the value obtained by using the identity is

(A) $\frac{9p^2}{25} + \frac{1}{9}$ (B) $\frac{1}{9} - \frac{9p^2}{25}$ (C) $\frac{9p^2}{25} - \frac{1}{9}$ (D) $\frac{3p^2}{5} - \frac{1}{3}$

ANS . C

98. Using the identity the value obtained from the product 25.4×24.6 is
 (A) 62.84 (B) 624.84 (C) 642.84 (D) 264.84

ANS . B

99. Using the identity $(a+b)(a-b) = a^2 - b^2$, the value obtained from the product $(2/5+x)(2/5-x)(4/25+x)$ is _____

(A) $\frac{16}{625} - x^4$ (B) $\frac{16}{625} + x^4$ (C) $x^4 - \frac{16}{625}$ (D) $x^4 + \frac{16}{625}$

ANS . A

100. If $(x - 3y)(x + 3y)(x^2 + 9y)$ is simplified, then the answer is _____
 (A) $x^4 + 81y^4$ (B) $-81y^4 + x^4$ (C) $x^4 - 81y^4$ (D) $-x^4 - 81y^4$

ANS . C