

Board –

Class –

Topic –

Q.1 Add the following algebraic expressions:

$$2, \frac{2y}{3} - \frac{5y^2}{3} + \frac{5y^3}{2}, -\frac{4}{3} + \frac{2y^2}{3} - \frac{y}{2}, \frac{5y^3}{3} + 3y^2 + 3y + \frac{6}{5}$$

Q.2 Subtract: $\left(-2y^2 + \frac{1}{2}y - 3\right)$ from $7y^2 - 2y + 10$.

Q.3 Subtract: $\frac{3}{2}x^2y + \frac{4}{5}y - \frac{1}{3}x^2yz$ from $\frac{12}{5}x^2yz - \frac{3}{5}xyz + \frac{2}{3}x^2y$.

Q.4 Find the volume of the rectangular boxes with following length, breadth and height:

	Length	Breadth	Height
(i)	$2ax$	$3by$	$5cz$
(ii)	m^2n	n^2p	p^2m
(ii)	$2q$	$4q^2$	$8q^3$

Q.5 Find each of the following products:

(i) $(-2x^2) \times (7a^2x^7) \times (6a^5x^5)$

(ii) $(4s^2t) \times (3s^3t^3) \times (2st^4) \times (-2)$

Q.6 Multiply $-\frac{4}{3}xy^3$ by $\frac{6}{7}x^2y$ and verify your result for $x = 2$ and $y = 1$.

Q.7 Find the product of $-5x^2y$, $-\frac{2}{3}xy^2z$, $\frac{8}{15}xyz^2$ and $-\frac{1}{4}$. Verify result when $x = 1$, $y = 2$ and $z = q$.

Q.8 Find the product of $\frac{7}{2}s^2t$ and $s + t$. Verify the result for $s = \frac{1}{2}$ and $t = 5$

Q.9 Find the following products:

(i) $100x \times (0.01x^4 - 0.01x^2)$

(ii) $121.5ab \times \left(ac + \frac{b}{10} \right)$

(iii) $0.1a \times (0.01a \times 0.001b)$

Q.10 Add:

(i) $5m(3 - m)$ and $6m^2 - 13m$

(ii) $4y(3y^2 + 5y - 7)$ and $2(y^3 - 4y^2 + 5)$

Q.11 (i) Subtract: $3l(-4m + 5n)$ from $4l(10n - 3m + 2l)$

(ii) Subtract: $3a(a + b + c) - 2b(a + b + c)$ from $4c(-a + b + c)$

Q.12 Multiply $\left(\frac{1}{5}x - \frac{1}{4}y \right)$ and $(5x^2 - 4y^2)$

Q.13 Multiply $(3x^2 + y^2)$ by $(x^2 + 2y^2)$.

Q.14 Multiply: $\{2m + (-n)\}$ by $\{-3m + (-5)\}$

Q.15 Find the product of $\left(y + \frac{2}{7}y^2 \right)$ and $(7y - y^2)$ and verify the result for $y = 3$.

Q.16 If $\left(x + \frac{1}{x} \right) = 3$, then find value of $\left(x^2 + \frac{1}{x^2} \right)$.

Q.17 If $\left(x - \frac{1}{x} \right) = \frac{1}{2}$, then find value of $\left(4x^2 + \frac{4}{x^2} \right)$.

Q.18 If $\left(x + \frac{1}{x} \right) = 4$, then find value of $\left(x^4 + \frac{1}{x^4} \right)$.

Q.19 If $\left(x + \frac{1}{x} \right) = \sqrt{3}$, then find the value of $\left(x^3 + \frac{1}{x^3} \right)$

Q.20 If $\left(x + \frac{1}{x} \right) = 2$, then find the value of $\left(x^3 + \frac{1}{x^3} \right)$

Q.21 If $\left(x^2 + \frac{1}{x^2}\right) = 102$, then find the value of $\left(x - \frac{1}{x}\right)$

Q.22 If $\left(x^4 + \frac{1}{x^4}\right) = 322$, then find the value of $\left(x - \frac{1}{x}\right)$

Q.23 If $\left(x^3 + \frac{1}{x^3}\right) = 52$, then find the value of $\left(x + \frac{1}{x}\right)$

Q.24 If $\left(x^3 - \frac{1}{x^3}\right) = 14$, then find the value of $\left(x - \frac{1}{x}\right)$.

Q.25 If x is an integer such that $\left(x + \frac{1}{x}\right) = \left(\frac{17}{4}\right)$, then find the value of $\left(x - \frac{1}{x}\right)$

Q.26 If $\left(x^4 + \frac{1}{x^4}\right) = 727$, then find the value of $\left(x^3 - \frac{1}{x^3}\right)$

Q.27 If $\left(2x - \frac{3}{x}\right) = 5$, then find the value of $\left(4x^2 - \frac{9}{x^2}\right)$

Q.28 If $x + y = 7$ and $xy = 12$, then find the value of $(x^2 + y^2)$

Q.29 If $\frac{5^x}{125} = 1$, then find the value of x

Q.30 Find the values of -

(i) 998^2

(ii) 5.2^2

(iii) 78×82

(iv) 1.05×9.5

(v) $51^2 - 49^2$

(vi) $(1.02)^2 - (0.98)^2$

(vii) $12.1^2 - 7.9^2$

(viii) 103×104

(ix) 5.1×5.2

(x) 9.7×9.8

Answer

1. $\frac{28}{15} + \frac{19}{6}y + 2y^2 + \frac{25}{6}y^3$

2. $9y^2 - \frac{5}{2}y + 13$

3. $\frac{41}{15}x^2yz - \frac{5}{6}x^2y - \frac{3}{5}xyz - \frac{4}{5}y$

4. (i) $30abcxyz$ (ii) $m^3n^3p^3$

(iii) $64q^6$

5. (i) $-84x^{14}a^7$ (ii) $-48s^6t^8$ (iii) $1000x^{14}y^{11}$

6. $-\frac{8}{7}x^3y^4$

7. $-\frac{4}{9}x^4y^4z^4$

8. $\frac{7}{2}s^3t + \frac{7}{2}s^2t^2$

9. (i) $x^5 - x^3$

(ii) $121.5a^2bc + 12.15ab^2$

(iii) $0.001a^2 + 0.0001ab$

10. (i) $2m + m^2$

11. (i) $25h + 5h^2$

(ii) $-7ac + 6bc + 4c^2 - 3a^2 - ab - 2b^2$

12. $x^3 - \frac{4}{5}xy^2 - \frac{5}{4}x^2y + y^3$

13. $3x^4 + 7x^2y^2 + 2y^4$

15. $7y^2 + y^3 - \frac{2}{7}y^4$

16. 7

17. 9

18. 194

19. 0

20. 2

21. 10

22.4

23.4

24.2

25. $15/4$

26.140

27.35

28.25

29.3

30. (i) 996004 (ii) 27.04 (iii) 6396 (iv) 9.975 (v) 200
(vi) 0.08 (vii) 84 (viii) 10712 (ix) 26.52 (x) 95.06