

SECTION [A]

1. Simplify $(a + b + c)(a + b - c)$
2. Find the products. (i) $(2a^2 + 9)(2a^2 + 5)$ (ii) $(0.4p - 0.5q)^2$
3. Simplify. $(m^2 - n^2m)^2 + 2m^3n^2$
4. Simplify : $n^2(n - 2) + 2n^3(n + 3) - 6n(n - 4)$

SECTION [B]

5. Evaluate (i) 998^2 (ii) 297×303 (iii) $(1.02)^2 - (0.98)^2$
6. Factorise: $25 - a^2 - b^2 - 2ab$
7. If $(x + \frac{1}{x}) = 4$, find the value of $x^2 + \frac{1}{x^2}$ and $x^4 + \frac{1}{x^4}$
8. If $(x - \frac{1}{x}) = 3$ find the value of $x^3 + \frac{1}{x^3}$
9. If $x - y = 7$, $xy = 9$ Find the value of $x^2 + y^2$
10. Simplify. $(m^2 - n^2m)^2 + 2m^3n^2$

SECTION [C]

11. Evaluate using algebraic identities $(54)^2$, $(78)^2$, $(999)^2$
12. The perimeter of a triangle is $6p^2 - 4p + 9$ and two of its adjacent side are $p^2 - 2p + 1$ and $3p^2 - 5p + 3$. Find third side of triangle
13. What must be subtracted from $4p^2 - 2pq - 6q^2 - r + 5$ to get $-p^2 + pq - 8q^2 - 2r + 5$
14. Find the product of (i) $(x^4 + \frac{1}{x^4})$ and $(x + \frac{1}{x})$ (ii) $(2x^2 + 3x - 7)(3x^2 - 5x - 4)$
15. Two adjacent side of a rectangle are $5x^2 - 3y^2$ and $x^2 - 2xy$ Find its perimeter

SECTION [D]

16. Without actual multiplication find the value of : $\frac{375 \times 375 - 125 \times 125}{225 \times 225 - 75 \times 75}$
17. If $a^2 + b^2 + c^2 - ab - bc - ca = 0$, prove that $a = b = c$
18. If $x + y = 3$ and $xy = 2$, find the value of $x^2 + y^2$
19. Show that : $(8xy + 5z)^2 - (8xy - 5z)^2 = 160xyz$
20. What must be added to $(2x + 3)^2 - (3x + 2)^2$ to make it 5?