

Class 9th - Polynomials - Test 4

1. The value of $(x + 2y + 2z)^2 + (x - 2y - 2z)^2$ is:
- $2x^2 + 8y^2 + 8z^2$
 - $2x^2 + 8y^2 + 8z^2 + 8xyz$
 - $2x^2 + 8y^2 + 8z^2 - 8yz$
 - $2x^2 + 8y^2 + 8z^2 + 16yz$
2. The value of $25x^2 + 16y^2 + 40xy$ at $x = 1$ and $y = -1$ is :
- 81
 - 49
 - 1
 - None of these
3. On simplifying $(a + b)^3 + (a - b)^3 + 6a(a^2 - b^2)$ we get :
- $8a^2$
 - $8a^2b$
 - $8a^3b$
 - $8a^3$
4. Find the value of $\frac{a^3 + b^3 + c^3 - 3abc}{ab + bc + ca - a^2 - b^2 - c^2}$ when $a = -5, b = -6, c = 10$
- 1
 - 1
 - 2
 - 2
5. If $(x + y + z) = 1, xy + yz + zx = -1, xyz = -1$ then value of $x^3 + y^3 + z^3$ is :
- 1
 - 1
 - 2
 - 2
6. Degree of zero polynomial is :
- 0
 - 1
 - Both 0 & 1
 - Not defined
7. Factors of $(42 - x - x^2)$ are:
- $(x - 7)(x - 6)$
 - $(x + 7)(x - 6)$
 - $(x + 7)(6 - x)$
 - $(x + 7)(x + 6)$
8. Factors of $\left(x^2 + \frac{x}{6} - \frac{1}{6}\right)$ are :
- $\frac{1}{6}(2x + 1)(3x + 1)$
 - $\frac{1}{6}(2x + 1)(3x - 1)$
 - $\frac{1}{6}(2x - 1)(3x - 1)$
 - $\frac{1}{6}(2x - 1)(3x + 1)$
9. Factors of polynomial $x^3 - 3x^2 - 10x + 24$ are :
- $(x - 2)(x + 3)(x - 4)$
 - $(x + 2)(x + 3)(x + 4)$
 - $(x + 2)(x - 3)(x - 4)$
 - $(x - 2)(x - 3)(x - 4)$
10. If $xy(x - y) + yz(y - z) + zx(z - x) = k(x - y)(y - z)(z - x)$, then which of these are not true :
- $k = 1$
 - $k = 0$
 - $k = -1$
 - $k = -2$
11. If $\left(x + \frac{1}{x}\right) = 3$, then $\left(x^2 + \frac{1}{x^2}\right)$ is equal to
- $\frac{10}{3}$
 - $\frac{82}{9}$
 - 7
 - 11
12. If $\left(x - \frac{1}{x}\right) = \frac{1}{2}$, then $\left(4x^2 + \frac{4}{x^2}\right)$ is equal to -
- 7
 - 7
 - 9
 - 9

13. If the value of $\left(x^2 + \frac{1}{x^2}\right) = 102$, the value of $\left(x - \frac{1}{x}\right)$ is -
- (a) 8
(b) 10
(c) 12
(d) 13
14. If $x + y = 5$ and $xy = 6$, the value of $(x^3 + y^3)$ is -
- (a) 91
(b) 133
(c) 35
(d) 343
15. If $x^{1/3} + y^{1/3} + z^{1/3} = 0$, then -
- (a) $x + y + z = 0$
(b) $(x + y + z)^3 = 27xyz$
(c) $x + y + z = 3xyz$
(d) $x^3 + y^3 + z^3 = 0$
16. If x and y are non-zero rational unequal numbers, then $\frac{(x + y)^2 - (x - y)^2}{x^2y - xy^2}$ is equal to -
- (a) $\frac{1}{xy}$
(b) $\frac{1}{x - y}$
(c) $\frac{4}{x - y}$
(d) $\frac{2}{x - y}$
17. If $(x - 2)$ is a factor of $(x^2 + 3qx - 2q)$, then the value of q is -
- (a) 2
(b) -2
(c) 1
(d) -1
18. If $x^3 + 6x^2 + 4x + k$ is exactly divisible by $(x + 2)$, then the value of k is -
- (a) -6
(b) -7
(c) -8
(d) -10
19. If $(x^5 - 9x^2 + 12x - 14)$ is divided by $(x - 3)$, the remainder is -
- (a) 184
(b) 56
(c) 2
(d) 1
20. If $2x^3 + 5x^2 - 4x - 6$ is divided by $2x + 1$, the remainder is -
- (a) $\frac{13}{2}$
(b) 3
(c) -3
(d) 6
21. If $x^3 + 5x^2 + 10k$ leaves remainder $-2x$ when divided by $x^2 + 2$, then the value of k is -
- (a) -2
(b) -1
(c) 1
(d) 2
22. The factors of $(x^3 - x^2y - xy^2 + y^3)$ are -
- (a) $(x + y)(x^2 + y^2 - xy)$
(b) $(x + y)(x^2 + y^2 + xy)$
(c) $(x + y)^2(x - y)$
(d) $(x - y)^2(x + y)$
23. The factors of $\left(x^2 + \frac{1}{x^2} - 3\right)$ are -
- (a) $\left(x + \frac{1}{x} - 1\right)\left(x - \frac{1}{x} - 1\right)$
(b) $\left(x - \frac{1}{x} - 1\right)\left(x + \frac{1}{x} + 1\right)$
(c) $\left(x - \frac{1}{x} + 1\right)\left(x - \frac{1}{x} - 1\right)$
(d) $\left(x + \frac{1}{x} - 1\right)\left(x - \frac{1}{x} + 1\right)$
24. The factors of $(x - y)^3 + (y - z)^3 + (z - x)^3$ are -
- (a) $(x + y + z)(x^2 + y^2 + z^2 - xy - yz - zx)$
(b) $(x - y - z)(x^2 + y^2 + z^2 + xy + yz + zx)$
(c) $(x - y)(y - z)(z - x)$
(d) $3(x - y)(y - z)(z - x)$

25. The factors of $(x^3 - 1 + y^3 + 3xy)$ are -
- $(x - 1 + y)(x^2 + 1 + y^2 + x + y - xy)$
 - $(x + y + 1)(x^2 + y^2 + 1 - xy - y - x)$
 - $(x - 1 + y)(x^2 - 1 - y^2 + x + y + xy)$
 - $3(x + y - 1)(x^2 + y^2 - 1)$
26. The value of :
 $(a^{1/8} + a^{-1/8})(a^{1/8} - a^{-1/8})(a^{1/4} + a^{-1/4})(a^{1/4} + a^{-1/4})$
 is -
- $(a + a^{-1})$
 - $(a - a^{-1})$
 - $(a^2 - a^{-2})$
 - $(a^{1/2} - a^{-1})$
27. If $a + b + c = 0$, then $a^2 + b^2 + c^2$ is -
- $-4(ab + bc + ca)$
 - $-2(ab + bc + ca)$
 - 0
 - $2a^2 - 2bc$
28. The value of x satisfying the equation $x^2 + p^2 = (q - x)^2$ is -
- $\frac{p^2 - q^2}{2}$
 - $\frac{q^2 - p^2}{2q}$
 - $\frac{q^2 - p^2}{2q}$
 - $\frac{p^2 - q^2}{2q}$
29. If $a - b = 3$ and $a^3 - b^3 = 117$, then a + b is equal to -
- 5
 - 7
 - 9
 - 11
30. When $x^3 + 2x^2 + 2x - 4$ and $x^3 + 2x^2 - 3x + 6$ are divided by $x - 2$, the remainders are R_1 and R_2 respectively. Which of the following statements is true for R_1 and R_2 ?
- $R_1 = 2R_2$
 - $2R_1 = R_2$
 - $R_1 = R_2$
 - $R_1 + R_2 = 0$