



STANDARD 8TH: CHAPTER 6

Factorisation of Algebraic Expressions

Q.1 Choose the correct alternative

1. If $a^2 + b^2 + c^2 = 16$ and $ab + bc + ca = 10$ find the value of $a+b+c$?
 - a) ± 9
 - b) ± 6
 - c) ± 12
 - d) ± 4
2. For what value of k , $(x - 5)$ is factor of $x^3 - 3x^2 + kx - 10$.
 - a) -8
 - b) 8
 - c) 4
 - d) 5
3. If $x - \frac{1}{x} = 3$ find the value of $x^3 - \frac{1}{x^3}$?
 - a) 24
 - b) 16
 - c) 36
 - d) 32
4. If $x = \sqrt{10} + 3$ find the value of $x^3 - \frac{1}{x^3}$?
 - a) 216
 - b) 243
 - c) 251
 - d) 234
5. Find the product of two consecutive numbers where four times the first Number is 10 more than thrice the second number
 - a) 182
 - b) 234
 - c) 150
 - d) 169

6. Twice a certain number, increased by 5, is equal to three times the number decreased by 4. Find the algebraic expression for the number.
- $n^2 - 9$
 - $n(n - 9)$
 - $n = 9$
 - None of this
7. Factorization of $x^4yz + xy^4z + xyz^4$ results in
- $x^2y^2z^2(x + y + z)$
 - $xyz(x^2 + y^2 + z^2)$
 - $xyz(x + y + z)$
 - $xyz(x^3 + y^3 + z^3)$
8. Which of the following statement is correct
- $(x^2 - 2xy) \div x = x - 2y$
 - $(x^2 - 2xy) \div x = 2x - 2y$
 - $(x^2 - 2xy) \div x = x + 2y$
 - $(x^2 - 2xy) \div x = x - y$
9. Factorize the following $4p^2 + 12pq + 9q^2 - 8p - 12q$
- $(2p + 3q)(2p - 3q - 4)$
 - $(2p - 3q)(2p + 3q - 4)$
 - $(2p + 3q)(2p + 3q + 4)$
 - $(2p + 3q)(2p + 3q - 4)$
10. Factorize: $6\sqrt{2}x^2 + 2x - 2\sqrt{2}$
- $(\sqrt{2}x + 1)(6x - 2\sqrt{2})$
 - $(\sqrt{2}x - 1)(6x - 2\sqrt{2})$
 - $(\sqrt{2}x + 1)(6x + 2\sqrt{2})$
 - $(\sqrt{2}x - 1)(6x - 2\sqrt{2})$

Q.2 Solve the following:

- Factorize $(a - b)^3 + (b - c)^3 + (c - a)^3$
- If $a + b + c = 6$ and $ab + bc + ac = 12$ then prove that $a^3 + b^3 + c^3 - 3abc = 0$

3. Factorize: $27a^3 - b^3 - 27a^2b + 9ab^2$
4. Factorize: $(p^2 - 4p)(p^2 - 4p - 1) - 20$.
5. Factorize: $\frac{64}{125}a^3 - 8 - \frac{96}{25}a^2 + \frac{48}{5}a$.
6. Simplify the following: $\frac{(x-1)(x-2)(x^2-9x+14)}{(x-7)(x^2-3x+2)}$
7. Factorize $x^4 - (x - y)^4$
8. If $a + b + c = 2s$ then $(s - a)^2 + (s - b)^2 + (s - c)^2 + s^2 = ?$
9. Factorise $25(a+b)^2 - (a-b)^2$
10. Give 5 examples of algebraic expression with 3 variables.