



STANDARD 8TH: CHAPTER 6

Factorisation of Algebraic Expressions

Q1. Choose all the correct alternatives.

1. $x^2 - 10x + 25$ by factorization gives_____.
 a) $(x + 5)(x + 5)$
 b) $(x - 5)^2$
 c) $(x - 5)(x - 5)$
 d) *None of these*

2. Factorization of $3x^2 - 12xy$ gives_____.
 a) $3(x^2 + 4xy)$
 b) $3x(x - 4y)$
 c) $3(3x - 4y)$
 d) $x(3x - 4y)$

3. Factorise $x^3 - 64$
 a) $(x + 4)(x^2 + 4x + 16)$
 b) $(x + 4)(x - 4x + 16)$
 c) $(x - 4)(x^2 + 4x + 16)$
 d) $(x + 4)(x - 4)$

4. Which of the following are correct steps in Factorisation $ab - a - b + 1$
 a) $(a)(b - 1) - 1(b - 1)$
 b) $(b)(a - 1) - 1(a - 1)$
 c) $(a - 1)(b - 1)$
 d) $(ab - 1)(a - 1)(b - 1)$

5. Factorize $36p^2 - 84pq + 49q^2 + 4r^2 + 32rs + 64s^2$
 a) $(6p + 7q)^2 + (2r + 8s)^2$
 b) $(6p - 7q)(6p - 9q) + (2r + 8s)(2r + 8s)$
 c) $(6p - 7q)^2 + (2r - 8s)^2$
 d) $(6p - 7q)^2 + (2r + 8s)^2$

6. What are factors of $4(x + y)(3a - b) + 6(x + y)(2b - 3a)$?
 a) $4b - 3a$
 b) $3a - 4b$
 c) $x + y$
 d) 2

7. If $a + b$ is a factor of $a^2 + 4ab + 3b^2$ what is the other factor?
- $a - 3b$
 - $a + b$
 - $a + 3b$
 - None of these
8. What is HCF of $243xy^2z^2$, $81xy^3z^2$ and $9z^2xy$?
- $243xy^2z$
 - x^2yz
 - xyz^2
 - $9xyz^2$
9. If the perimeter of the rhombus is $4m$ and the lengths of diagonals are x and y then form algebraic expression that represent area of the rhombus
- $4(x+y)$
 - $x-y$
 - $xy/2$
 - $xy/4$
10. $(a - 5)$ is a factor of $Ka^2 - 19Ka + 70K$, then what are other factors:
- $(a + 14)$
 - $(a - 14)$
 - K
 - K^2

Q2. Solve the following

- If $a + b = 7$ and $ab = 10$ then find the value of $(a^4 + b^4)$
- Factorize $25 - 4y^2 + 21$
- Factorize: $(x^2 + 2x + 1) - (x + 1)(2x - 3)$

4. The digits 2,0,2 and 3 are placed in the expression below, one digit per box. What is the maximum possible value of the expression?

$$\begin{array}{|c|} \hline \square \\ \hline \end{array} \begin{array}{|c|} \hline \square \\ \hline \end{array} \times \begin{array}{|c|} \hline \square \\ \hline \end{array} \begin{array}{|c|} \hline \square \\ \hline \end{array}$$

5. Suppose 15% of x equals 20% of y What percentage of x is y ?
6. A *palindrome* is a number that has the same value when read from left to right or from right to left. (For example, 12321 is a palindrome.) Let N be the least three-digit integer which is not a palindrome but which is the sum of three distinct two-digit palindromes. What is the sum of the digits of N ?
7. Verify if $(2x+3)$ and $(x+3)$ are the linear factors of the quadratic equation $f(x) = 2x^2 + 9x + 9$.
8. One of the factors of $x^5 - x^3y^2 + x^2y^3 - y^2$ is $x^2 - y^2$ what is another factor?
9. Frame an algebraic expression to find length of the total journey:
Ramesh travelled $\frac{3}{5}th$ of his journey by rail, $\frac{1}{4}th$ by car and $\frac{1}{8}t$ by bus, and the remaining 4km by foot. What is the length of the total journey?
10. Find the product of the sum of $3x^2 + 5y^2$ and $x^2 - 4y^2$ and the difference of $x^2 - y^2$ and $2x^2 + 3y^2$