

Factorisation by Regrouping Terms

A. Choose the Correct Answer:

1. Factorizing $2x + 4y + 3x + 6y$ by regrouping gives:

- a) $(2x + 3x) + (4y + 6y)$
- b) $(2x + 4y) + (3x + 6y)$
- c) $(2x + 6y) + (4y + 3x)$
- d) $(2x + 6y) + (3x + 4y)$

2. The correct factorization of $ab + ac + db + dc$ is:

- a) $(a + d)(b + c)$
- b) $(a + b)(d + c)$
- c) $(a + c)(b + d)$
- d) $(a + d)(c + b)$

3. Which method is used to factorize expressions like $x + 2y + 3x + 6y$?

- a) Taking common monomial
- b) Using identities
- c) Regrouping terms
- d) Substitution

4. The first step in regrouping terms is:

- a) Multiply the terms
- b) Group terms to find common factors
- c) Divide all terms by 2
- d) Expand the expression

5. Factorization of $ax + ay + bx + by$ by regrouping is:

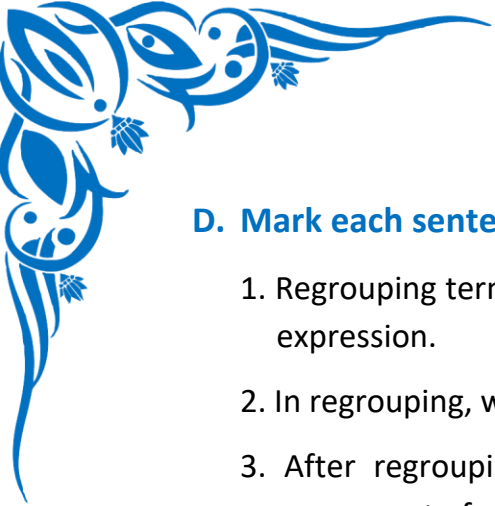
- a) $(a + b)(x + y)$
- b) $(x + y)(a + b)$
- c) $(a + b)(x - y)$
- d) $(x - y)(a + b)$

B. Write the Missing Terms to Complete the Sentences:

1. In factorization by regrouping, terms are rearranged to find _____ factors.
2. The expression $3x + 6y + 2x + 4y$ can be grouped as $(3x + 6y) + (\text{_____})$.
3. In $ax + ay + bx + by$, common factors in first and second groups are _____ and _____.
4. Regrouping helps in expressions where direct common factor is _____ visible.
5. After regrouping, the factor common in both groups is taken _____.

C. Figure out the answers to these questions:

1. Factorize $2a + 4b + 3a + 6b$ by regrouping.
2. Factorize $x + 2y + 3x + 6y$ by regrouping.
3. Factorize $5p + 10q + 2p + 4q$.
4. Factorize $ab + ac + db + dc$.
5. Factorize $7x + 14y + 2x + 4y$.



D. Mark each sentence with a True (✓) or False (X):

1. Regrouping terms is used when there is no direct common factor for the entire expression. _____
2. In regrouping, we find common factors separately in different groups. _____
3. After regrouping, if two groups have the same binomial factor, it is not necessary to factor it out. _____
4. Factorization by regrouping can be applied to expressions with four terms. _____
5. Regrouping always gives factors in one step. _____

E. Challenge yourself with these questions:

1. Factorize $6m + 9n + 2m + 3n$ by regrouping.
2. Factorize $4x + 8y + 5x + 10y$.
3. Factorize $a + 2b + 3a + 6b$.
4. Factorize $2p + 3q + 4p + 6q$.
5. Factorize $8x + 4y + 6x + 3y$.