

Chapter 14



Factorisation

CASE-II:

When a polynomial is a common multiplier of each term of the given expression. In this case we take out the common multiplier and use the distributive property.

Example:

Factorise $3(4x - 3y) - 4(4x - 3y)^2$?

Sol:

Here $(4x - 3y)$ is common in both terms,

$$\begin{aligned} \therefore 3(4x - 3y) - 4(4x - 3y)^2 &= (4x - 3y)[3 - 4(4x - 3y)] \\ &= (4x - 3y)[3 - 16x + 12y] \end{aligned}$$

$$\therefore 3(4x - 3y) - 4(4x - 3y)^2 = (4x - 3y)[3 - 16x + 12y]$$

ILLUSTRATIONS:

1) Factorise each of the following expressions by taking out common factors.

(i) $4x^2 - 28$

(ii) $16m^2n^3 + 24m^3n^4 - 28m^3n^2$



Sol:

(i) The H.C.F of $4x^2$ and 28 is 4.

The factorisation of $4x^2 - 28$ is $4(x^2 - 7)$.

(ii) The H.C.F of $16m^2n^3$, $24m^3n^4$ and $28m^3n^2$ is $4m^2n^2$.

The factorisation of $16m^2n^3 + 24m^3n^4 - 28m^3n^2$ is

$$4m^2n^2(4n + 6mn^2 - 7m).$$

