



#### Factorisation of Algebraic Expressions Ex 5.1 Q10

**Answer :**

The given expression to be factorized is

$$(x+2)(x^2+25)-10x^2-20x$$

Take common  $-10x$  from the last two terms. That is

$$(x+2)(x^2+25)-10x^2-20x = (x+2)(x^2+25)-10x(x+2)$$

Again take common  $(x+2)$  from the two terms of the above expression. Then

$$\begin{aligned}(x+2)(x^2+25)-10x^2-20x &= (x+2)\{(x^2+25)-10x\} \\ &= (x+2)(x^2+25-10x) \\ &= (x+2)(x^2-10x+25) \\ &= (x+2)\{(x)^2-2 \cdot x \cdot 5+(5)^2\}\end{aligned}$$

$$\Rightarrow (x+2)(x^2+25)-10x^2-20x = (x+2)(x-5)^2$$

We cannot further factorize the expression.

So, the required factorization of  $(x+2)(x^2+25)-10x^2-20x$  is  $(x+2)(x-5)^2$ .

#### Factorisation of Algebraic Expressions Ex 5.1 Q11

**Answer :**

The given expression to be factorized is

$$2a^2+2\sqrt{6}ab+3b^2$$

This can be written in the form

$$\begin{aligned}2a^2+2\sqrt{6}ab+3b^2 &= (\sqrt{2}a)^2+2 \cdot \sqrt{2}a \cdot \sqrt{3}b+(\sqrt{3}b)^2 \\ &= (\sqrt{2}a+\sqrt{3}b)^2\end{aligned}$$

We cannot further factorize the expression.

So, the required factorization of  $2a^2+2\sqrt{6}ab+3b^2$  is  $(\sqrt{2}a+\sqrt{3}b)^2$ .

#### Factorisation of Algebraic Expressions Ex 5.1 Q12

**Answer :**

The given expression to be factorized is

$$(a-b+c)^2+(b-c+a)^2+2(a-b+c)(b-c+a)$$

This can be written as

$$\begin{aligned}(a-b+c)^2+(b-c+a)^2+2(a-b+c)(b-c+a) \\ &= (a-b+c)^2+2 \cdot (a-b+c) \cdot (b-c+a)+(b-c+a)^2 \\ &= \{(a-b+c)+(b-c+a)\}^2 \\ &= (a-b+c+b-c+a)^2 \\ &= (2a)^2 \\ &= 4a^2\end{aligned}$$

We cannot further factorize the expression.

So, the required factorization of  $(a-b+c)^2+(b-c+a)^2+2(a-b+c)(b-c+a)$  is  $4a^2$ .

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