Factorisation of Algebraic Expressions Ex 5.1 Q22

Answer :

The given expression to be factorized is

$x^2-2\sqrt{2}x-30$

This can be written in the form

$x^2-2\sqrt{2}x-30=x^2-(5\sqrt{2}-3\sqrt{2})x-30$

$=x^2-5\sqrt{2}x+3\sqrt{2}x-30$

Take common x from the first two terms and $3\sqrt{2}$ from the last two terms,

$x^2-2\sqrt{2}x-30=x(x-5\sqrt{2})+3\sqrt{2}(x-5\sqrt{2})$

Finally take common $(x-5\sqrt{2})$ from the above expression,

$x^2-2\sqrt{2}x-30=(x-5\sqrt{2})(x+3\sqrt{2})$

We cannot further factorize the expression.

So, the required factorization of $x^2-2\sqrt{2}x-30$ is $\boxed{(x-5\sqrt{2})(x+3\sqrt{2})}$.

Factorisation of Algebraic Expressions Ex 5.1 Q23

Answer :

The given expression to be factorized is

$x^2-\sqrt{3}x-6$

This can be written in the form

$x^2-\sqrt{3}x-6=x^2-(2\sqrt{3}-\sqrt{3})x-6$

$=x^2-2\sqrt{3}x+\sqrt{3}x-6$

Take common x from the first two terms and $\sqrt{3}$ from the last two terms. Then we have

$x^2-\sqrt{3}x-6=x(x-2\sqrt{3})+\sqrt{3}(x-2\sqrt{3})$

Finally take common $(x-2\sqrt{3})$ from the above expression. Then we have

$x^2-\sqrt{3}x-6=(x-2\sqrt{3})(x+\sqrt{3})$

We cannot further factorize the expression.

So, the required factorization of $x^2-\sqrt{3}x-6$ is $\boxed{(x-2\sqrt{3})(x+\sqrt{3})}$.

Factorisation of Algebraic Expressions Ex 5.1 Q24

Answer :

The given expression to be factorized is

$x^2+5\sqrt{5}x+30$

This can be written in the form

$x^2+5\sqrt{5}x+30=x^2+(3\sqrt{5}+2\sqrt{5})x+30$

$=x^2+3\sqrt{5}x+2\sqrt{5}x+30$

Take common x from the first two terms and $2\sqrt{5}$ from the last two terms. Then we have

$x^2+5\sqrt{5}x+30=x(x+3\sqrt{5})+2\sqrt{5}(x+3\sqrt{5})$

Finally take common $(x+3\sqrt{5})$ from the above expression,

$x^2+5\sqrt{5}x+30=(x+3\sqrt{5})(x+2\sqrt{5})$

We cannot further factorize the expression.

So, the required factorization of $x^2+5\sqrt{5}x+30$ is $\boxed{(x+3\sqrt{5})(x+2\sqrt{5})}$.

********** END **********