Factorisation of Algebraic Expressions Ex 5.2 Q1

Answer :

The given expression to be factorized is

p^3+27

This can be written in the form

$p^3+27=(p)^3+(3)^3$

Recall the formula for sum of two cubes

$a^3+b^3=(a+b)(a^2-ab+b^2)$

Using the above formula, we have

$p^3+27=(p+3)\{(p)^2-p.3+(3)^2\}$

$=(p+3)(p^2-3p+9)$

We cannot further factorize the expression.

So, the required factorization of p^3+27 is $\boxed{(p+3)(p^2-3p+9)}$.

Factorisation of Algebraic Expressions Ex 5.2 Q2

Answer :

The given expression to be factorized is

y^3+125

This can be written in the form

$y^3+125=(y)^3+(5)^3$

Recall the formula for sum of two cubes

$a^3+b^3=(a+b)(a^2-ab+b^2)$

Using the above formula, we have

$y^3+125=(y+5)\{(y)^2-y.5+(5)^2\}$

$=(y+5)(y^2-5y+25)$

We cannot further factorize the expression.

So, the required factorization of y^3+125 is $\boxed{(y+5)(y^2-5y+25)}$.

Factorisation of Algebraic Expressions Ex 5.2 Q3

Answer :

The given expression to be factorized is

$1-27a^3$

This can be written in the form

$1-27a^3 = (1)^3 - (3a)^3$

Recall the formula for difference of two cubes

$a^3 - b^3 = (a-b)(a^2 + ab + b^2)$

Using the above formula, we have

$1-27a^3 = (1-3a)\{(1)^2 + 1.3a + (3a)^2\}$

$= (1-3a)(1+3a+9a^2)$

We cannot further factorize the expression.

So, the required factorization of $1-27a^3$ is $\boxed{(1-3a)(1+3a+9a^2)}$.

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