Factorizations Ex 7.2 Q5

Answer :

The greatest common factor of the terms $20x^3$, $-40x^2$ and $80x$ of the expression $20x^3 - 40x^2 + 80x$ is $20x$.

Now,

$20x^3 = 20x \times x^2$

$-40x^2 = 20x \times -2x$

and

$80x = 20x \times 4$

Hence, the expression $20x^3 - 40x^2 + 80x$ can be factorised as $20x(x^2 - 2x + 4)$.

Factorizations Ex 7.2 Q6

Answer :

The greatest common factor of the terms $2x^3y^2$, $-4x^2y^3$ and $8xy^4$ of the expression $2x^3y^2 - 4x^2y^3 + 8xy^4y^{64}$ is $2xy^2$.

Now,

$2x^3y^2 = 2xy^2 \times x^2$

$-4x^2y^3 = 2xy^2 \times -2xy$

$8xy^4 = 2xy^2 \times 4y^2$

Hence, the expression $2x^3y^2 - 4x^2y^3 + 8xy^4$ can be factorised as $2xy^2(x^2 - 2xy + 4y^2)$.

Factorizations Ex 7.2 Q7

Answer :

The greatest common factor of the terms $10m^3n^2$, $15m^4n$ and $-20m^2n^3$ of the expression $10m^3n^2 + 15m^4n - 20m^2n^3$ is $5m^2n$.

Now,

$10m^3n^2 = 5m^2n \times 2mn$

$15m^4n = 5m^2n \times 3m^2$

$-20m^2n^3 = 5m^2n \times -4n^2$

Hence, $10m^3n^2 + 15m^2n - 20m^2n^3$ can be factorised as $5m^2n(2mn + 3m^2 - 4n^2)$.

Factorizations Ex 7.2 Q8

Answer :

The greatest common factor of the terms $2a^4b^4$, $-3a^3b^5$ and $4a^2b^5$ of the expression $2a^4b^4 - 3a^3b^5 + 4a^2b^5$ is a^2b^4.

Now,

$2a^4b^4 = a^2b^4 \times 2a^2$

$-3a^3b^5 = a^2b^4 \times -3ab$

$4a^2b^5 = a^2b^4 \times 4b$

Hence, $(2a^4b^4 - 3a^3b^5 + 4a^2b^5)$ can be factorised as $[a^2b^4(2a^2 - 3ab + 4b)]$.

Factorizations Ex 7.2 Q9

Answer :

The greatest common factor of the terms $28a^2$, $14a^2b^2$ *and* $21a^4$ *of the expression* $28a^2 + 14a^2b^2 - 21a^4$ *is* $7a^2$.

Also, we can write $28a^2 = 7a^2 \times 4$, $14a^2b^2 = 7a^2 \times 2b^2$ *and* $21a^4 = 7a^2 \times 3a^2$.

$$\therefore\ 28a^2 + 14a^2b^2 - 21a^4 = 7a^2 \times 4 + 7a^2 \times 2b^2 - 7a^2 \times 3a^2$$
$$= 7a^2\left(4 + 2b^2 - 3a^2\right)$$

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