Algebraic Expressions Ex 7.2 Q1

Answer :

We have

(i) $3x + 7x = (3 + 7)x = 10x$

(ii) $-5xy + 9xy = (-5 + 9)xy = 4xy$

Algebraic Expressions Ex 7.2 Q2

Answer :

Simplifying the given expressions, we have

(i) $7x^3y + 9yx^3 = (7 + 9)x^3y = 16x^3y$

(ii) $12a^2b + 3ba^2 = (12 + 3)a^2b = 15a^2b$

Algebraic Expressions Ex 7.2 Q3

Answer :

Adding the given terms, we have

(i) $7abc + (-5abc) + (9abc) + (-8abc)$

$= 7abc - 5abc + 9abc - 8abc$

$= (7 - 5 + 9 - 8)abc$

$= (16 - 13)abc$

$= 3abc$

(ii) $2x^2y + (-4x^2y) + 6x^2y + (-5x^2y)$

$= 2x^2y - 4x^2y + 6x^2y - 5x^2y$

$= (2 - 4 + 6 - 5)x^2y$

$= (8 - 9)x^2y$

$= -x^2y$

Algebraic Expressions Ex 7.2 Q4

Answer :

Adding the given expressions, we have

(i) $x^3 - 2x^2y + 3xy^2 - y^3 + 2x^3 - 5xy^2 + 3x^2y - 4y^3$

Collecting positive and negative like terms together, we get

$x^3 + 2x^3 - 2x^2y + 3x^2y + 3xy^2 - 5xy^2 - y^3 - 4y^3$

$= 3x^3 + x^2y - 2xy^2 - 5y^3$

(ii) $(a^4 - 2a^3b + 3ab^3 + 4a^2b^2 + 3b^4) + (-2a^4 - 5ab^3 + 7a^3b - 6a^2b^2 + b^4)$

$a^4 - 2a^3b + 3ab^3 + 4a^2b^2 + 3b^4 - 2a^4 - 5ab^3 + 7a^3b - 6a^2b^2 + b^4$

Collecting positive and negative like terms together, we get

$a^4 - 2a^4 - 2a^3b + 7a^3b + 3ab^3 - 5ab^3 + 4a^2b^2 - 6a^2b^2 + 3b^4 + b^4$

$= -a^4 + 5a^3b - 2ab^3 - 2a^2b^2 + 4b^4$

Algebraic Expressions Ex 7.2 Q5

Answer :

(i) Required expression = $(8a - 6ab + 5b) + (-6a - ab - 8b) + (-4a + 2ab + 3b)$

Collecting positive and negative like terms together, we get

$8a - 6a - 4a - 6ab - ab + 2ab + 5b - 8b + 3b$

$= 8a - 10a - 7ab + 2ab + 8b - 8b$

$= -2a - 5ab$

(ii) Required expression = $(5x^3 + 7 + 6x - 5x^2) + (2x^2 - 8 - 9x) + (4x - 2x^2 + 3x^3) + (3x^3 - 9x - x^2) + (x - x^2 - x^3 - 4)$

Collecting positive and negative like terms together, we get

$5x^3 + 3x^3 + 3x^3 - x^3 - 5x^2 + 2x^2 - 2x^2 - x^2 - x^2 + 6x - 9x + 4x - 9x + x + 7 - 8 - 4$

$= 11x^3 - x^3 - 7x^2 + 11x - 18x + 7 - 12$

$= 10x^3 - 7x^2 - 7x - 5$

Algebraic Expressions Ex 7.2 Q6

Answer :

(i) Required expression = (x - 3y - 2z) + (5x +7y - 8z) +(3x - 2y + 5z)

Collecting positive and negative like terms together, we get

x + 5x + 3x - 3y + 7y - 2y - 2z - 8z + 5z

= 9x - 5y + 7y - 10z + 5z

= 9x + 2y - 5z

(ii) Required expression = (4ab - 5bc + 7ca) + (- 3ab + 2bc - 3ca) + (5ab - 3bc + 4ca)

Collecting positive and negative like terms together, we get

4ab - 3ab + 5ab - 5bc + 2bc - 3bc + 7ca - 3ca + 4ca

= 9ab - 3ab - 8bc + 2bc + 11 ca - 3ca

= 6ab - 6bc + 8ca

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