Algebraic Expressions Ex 7.2 Q7

Answer :

Sum of $3x^2 - 2x$ and $3x + 7$

$= (3x^2 - 2x) + (3x + 7)$

$= 3x^2 - 2x + 3x + 7$

$= (3x^2 + x + 7)$

Now, required expression $= (2x^2 - 3x + 1) + (3x^2 + x + 7)$

$= 2x^2 + 3x^2 - 3x + x + 1 + 7$

$= 5x^2 - 2x + 8$

Algebraic Expressions Ex 7.2 Q8

Answer :

Sum of $x^2 - 3y^2$ and $2x^2 - y^2 + 9$

$= (x^2 - 3y^2) + (2x^2 - y^2 + 9)$

$= x^2 + 2x^2 - 3y^2 - y^2 + 9$

$= 3x^2 - 4y^2 + 9$

Now, required expression $= (x^2 + 2xy + y^2) + (3x^2 - 4y^2 + 9)$

$= x^2 + 3x^2 + 2xy + y^2 - 4y^2 + 9$

$= 4x^2 + 2xy - 3y^2 + 9$

Algebraic Expressions Ex 7.2 Q9

Answer :

First, we need to find the sum of $2a^3 - 3b^3 - 3ab + 7$ and $-a^3 + b^3 + 3ab - 9$.

$= (2a^3 - 3b^3 - 3ab + 7) + (-a^3 + b^3 + 3ab - 9)$

Collecting positive and negative like terms together, we get

$= 2a^3 - a^3 - 3b^3 + b^3 - 3ab + 3ab + 7 - 9$

$= a^3 - 2b^3 - 2$

Now, the required expression $= (a^3 + b^3 - 3) + (a^3 - 2b^3 - 2)$.

$= a^3 + a^3 + b^3 - 2b^3 - 3 - 2$

$= 2a^3 - b^3 - 5$

Algebraic Expressions Ex 7.2 Q10

Answer :

(i) Required expression $= 3a^2b - 7a^2b$

$= (3 - 7)a^2b$

$= -4a^2b$

(ii) Required expression $= -3xy - 4xy$

$= -7xy$

Algebraic Expressions Ex 7.2 Q11

Answer :

(i) Required expression $= (3y) - (-4x)$

$= 3y + 4x$

(ii) Required expression $= (-5y) - (-2x)$

$= -5y + 2x$

Algebraic Expressions Ex 7.2 Q12

Answer :

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

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

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

$= -14x^3 + 13x^2 - 10x + 7$

(ii) Required expression $= (5x^2 - y + z + 7) - (-x^2 - 3z)$

$= 5x^2 - y + z + 7 + x^2 + 3z$

$= 5x^2 + x^2 - y + z + 3z + 7$

$= 6x^2 - y + 4z + 7$

(iii) Required expression $= (y^3 - 3xy^2 - 4x^2y) - (x^3 + 2x^2y + 6xy^2 - y^3)$

$= y^3 - 3xy^2 - 4x^2y - x^3 - 2x^2y - 6xy^2 + y^3$

$= y^3 + y^3 - 3xy^2 - 6xy^2 - 4x^2y - 2x^2y - x^3$

$= 2y^3 - 9xy^2 - 6x^2y - x^3$

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