



Algebraic Expressions Ex 7.2 Q7

Answer :

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

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

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

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

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

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

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

Algebraic Expressions Ex 7.2 Q8

Answer :

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

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

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

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

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

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

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

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

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

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

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

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

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

Algebraic Expressions Ex 7.2 Q10

Answer :

$$\begin{aligned}\text{(i) Required expression} &= 3a^2b - 7a^2b \\ &= (3 - 7)a^2b \\ &= -4a^2b\end{aligned}$$

$$\begin{aligned}\text{(ii) Required expression} &= -3xy - 4xy \\ &= -7xy\end{aligned}$$

Algebraic Expressions Ex 7.2 Q11

Answer :

$$\begin{aligned}\text{(i) Required expression} &= (3y) - (-4x) \\ &= 3y + 4x\end{aligned}$$

$$\begin{aligned}\text{(ii) Required expression} &= (-5y) - (-2x) \\ &= -5y + 2x\end{aligned}$$

Algebraic Expressions Ex 7.2 Q12

Answer :

$$\begin{aligned}\text{(i) Required expression} &= (4 - 5x + 6x^2 - 8x^3) - (6x^3 - 7x^2 + 5x - 3) \\ &= 4 - 5x + 6x^2 - 8x^3 - 6x^3 + 7x^2 - 5x + 3 \\ &= -8x^3 - 6x^3 + 7x^2 + 6x^2 - 5x - 5x + 3 + 4 \\ &= -14x^3 + 13x^2 - 10x + 7\end{aligned}$$

$$\begin{aligned}\text{(ii) Required expression} &= (5x^2 - y + z + 7) - (-x^2 - 3z) \\ &= 5x^2 - y + z + 7 + x^2 + 3z \\ &= 5x^2 + x^2 - y + z + 3z + 7 \\ &= 6x^2 - y + 4z + 7\end{aligned}$$

$$\begin{aligned}\text{(iii) Required expression} &= (y^3 - 3xy^2 - 4x^2y) - (x^3 + 2x^2y + 6xy^2 - y^3) \\ &= y^3 - 3xy^2 - 4x^2y - x^3 - 2x^2y - 6xy^2 + y^3 \\ &= y^3 + y^3 - 3xy^2 - 6xy^2 - 4x^2y - 2x^2y - x^3 \\ &= 2y^3 - 9xy^2 - 6x^2y - x^3\end{aligned}$$

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