



Exercise 8C

Term to be subtracted = $2a - 3b + c$

Changing the sign of each term of the expression gives $-2a + 3b - c$.

On adding:

$$(a + 2b - 3c) + (-2a + 3b - c)$$

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

$$= (1-2)a + (2+3)b + (-3-1)c$$

$$= -a + 5b - 4c$$

Q13

Answer :

To calculate how much less than $x - 2y + 3z$ is $2x - 4y - z$, we have to subtract $2x - 4y - z$ from $x - 2y + 3z$.

Change the sign of each term of the expression that is to be subtracted and then add.

Term to be subtracted = $2x - 4y - z$

Changing the sign of each term of the expression gives $-2x + 4y + z$.

On adding:

$$(x - 2y + 3z) + (-2x + 4y + z)$$

$$= x - 2y + 3z - 2x + 4y + z$$

$$= (1-2)x + (-2+4)y + (3+1)z$$

$$= -x + 2y + 4z$$

Q14

Answer :

To calculate how much does $3x^2 - 5x + 6$ exceed $x^3 - x^2 + 4x - 1$, we have to subtract $x^3 - x^2 + 4x - 1$ from $3x^2 - 5x + 6$.

Change the sign of each term of the expression that is to be subtracted and then add.

Term to be subtracted = $x^3 - x^2 + 4x - 1$

Changing the sign of each term of the expression gives $-x^3 + x^2 - 4x + 1$.

On adding:

$$\begin{aligned}(3x^2 - 5x + 6) + (-x^3 + x^2 - 4x + 1) \\&= 3x^2 - 5x + 6 - x^3 + x^2 - 4x + 1 \\&= -x^3 + (3+1)x^2 + (-5-4)x + 6 + 1 \\&= -x^3 + 4x^2 - 9x + 7\end{aligned}$$

Q15

Answer :

Add $5x - 4y + 6z$ and $-8x + y - 2z$.

$$\begin{aligned}(5x - 4y + 6z) + (-8x + y - 2z) \\&= 5x - 4y + 6z - 8x + y - 2z \\&= (5-8)x + (-4+1)y + (6-2)z \\&= -3x - 3y + 4z\end{aligned}$$

Adding $12x - y + 3z$ and $-3x + 5y - 8z$:

$$\begin{aligned}(12x - y + 3z) + (-3x + 5y - 8z) \\&= 12x - y + 3z - 3x + 5y - 8z \\&= (12-3)x + (-1+5)y + (3-8)z \\&= 9x + 4y - 5z\end{aligned}$$

Subtract $-3x - 3y + 4z$ from $9x + 4y - 5z$.

Change the sign of each term of the expression that is to be subtracted and then add.

Term to be subtracted = $-3x - 3y + 4z$

Changing the sign of each term of the expression gives $3x + 3y - 4z$.

On adding:

$$\begin{aligned} & (9x + 4y - 5z) + (3x + 3y - 4z) \\ &= 9x + 4y - 5z + 3x + 3y - 4z \\ &= (9+3)x + (4+3)y + (-5-4)z \\ &= \mathbf{12x + 7y - 9z} \end{aligned}$$

Q16

Answer :

To calculate how much is $2x - 3y + 4z$ greater than $2x + 5y - 6z + 2$, we have to subtract $2x + 5y - 6z + 2$ from $2x - 3y + 4z$.

Change the sign of each term of the expression that is to be subtracted and then add.

Term to be subtracted = $2x + 5y - 6z + 2$

Changing the sign of each term of the expression gives $-2x - 5y + 6z - 2$.

On adding:

$$\begin{aligned} & (2x - 3y + 4z) + (-2x - 5y + 6z - 2) \\ &= 2x - 3y + 4z - 2x - 5y + 6z - 2 \\ &= (2-2)x + (-3-5)y + (4+6)z - 2 \\ &= 0 - 8y + 10z - 2 \\ &= \mathbf{-8y + 10z - 2} \end{aligned}$$

Q17

Answer :

To calculate how much does 1 exceed $2x - 3y - 4$, we have to subtract $2x - 3y - 4$ from 1.

Change the sign of each term of the expression to be subtracted and then add.

Term to be subtracted = $2x - 3y - 4$

Changing the sign of each term of the expression gives $-2x + 3y + 4$.

On adding:

$$\begin{aligned} & (1) + (-2x + 3y + 4) \\ &= 1 - 2x + 3y + 4 \\ &= \mathbf{5 - 2x + 3y} \end{aligned}$$

***** END *****