

EXERCISE 7.3

PAGE NO: 7.16

1. Place the last two terms of the following expressions in parentheses preceded by a minus sign:

(i) $x + y - 3z + y$

(ii) $3x - 2y - 5z - 4$

(iii) $3a - 2b + 4c - 5$

(iv) $7a + 3b + 2c + 4$

(v) $2a^2 - b^2 - 3ab + 6$

(vi) $a^2 + b^2 - c^2 + ab - 3ac$

Solution:

(i) Given $x + y - 3z + y$

$$x + y - 3z + y = x + y - (3z - y)$$

(ii) Given $3x - 2y - 5z - 4$

$$3x - 2y - 5z - 4 = 3x - 2y - (5z + 4)$$

(iii) Given $3a - 2b + 4c - 5$

$$3a - 2b + 4c - 5 = 3a - 2b - (-4c + 5)$$

(iv) Given $7a + 3b + 2c + 4$

$$7a + 3b + 2c + 4 = 7a + 3b - (-2c - 4)$$

(v) Given $2a^2 - b^2 - 3ab + 6$

$$2a^2 - b^2 - 3ab + 6 = 2a^2 - b^2 - (3ab - 6)$$

(vi) Given $a^2 + b^2 - c^2 + ab - 3ac$

$$a^2 + b^2 - c^2 + ab - 3ac = a^2 + b^2 - c^2 - (-ab + 3ac)$$

2. Write each of the following statements by using appropriate grouping symbols:

(i) The sum of $a - b$ and $3a - 2b + 5$ is subtracted from $4a + 2b - 7$.

(ii) Three times the sum of $2x + y - [5 - (x - 3y)]$ and $7x - 4y + 3$ is subtracted from $3x - 4y + 7$

(iii) The subtraction of $x^2 - y^2 + 4xy$ from $2x^2 + y^2 - 3xy$ is added to $9x^2 - 3y^2 - xy$.

Solution:

(i) Given the sum of $a - b$ and $3a - 2b + 5 = [(a - b) + (3a - 2b + 5)]$.

This is subtracted from $4a + 2b - 7$.

Thus, the required expression is $(4a + 2b - 7) - [(a - b) + (3a - 2b + 5)]$

(ii) Given three times the sum of $2x + y - \{5 - (x - 3y)\}$ and $7x - 4y + 3 = 3[(2x + y - \{5 - (x - 3y)\}) + (7x - 4y + 3)]$

This is subtracted from $3x - 4y + 7$.

Thus, the required expression is $(3x - 4y + 7) - 3[(2x + y - \{5 - (x - 3y)\}) + (7x - 4y + 3)]$

(iii) Given the product of subtraction of $x^2 - y^2 + 4xy$ from $2x^2 + y^2 - 3xy$ is given by $\{(2x^2 + y^2 - 3xy) - (x^2 - y^2 + 4xy)\}$

When the above equation is added to $9x^2 - 3y^2 - xy$, we get

$\{(2x^2 + y^2 - 3xy) - (x^2 - y^2 + 4xy)\} + (9x^2 - 3y^2 - xy)$

This is the required expression.

