Exercise 8C

(i) Term to be subtracted = 5x

Changing the sign of each term of the expression gives -5x.

On adding:

$2x+(-5x) = 2x-5x$

$= (2-5)x$

$= -3x$

(ii) Term to be subtracted = -xy

Changing the sign of each term of the expression gives xy.

On adding:

$6xy+xy$

$= (6+1)xy$

$= 7xy$

(iii) Term to be subtracted = 3a

Changing the sign of each term of the expression gives -3a.

On adding:

$5b+(-3a)$

$= 5b-3a$

(iv) Term to be subtracted = -7x

Changing the sign of each term of the expression gives 7x.

On adding:

$9y+7x$

(v) Term to be subtracted = $10x^2$

Changing the sign of each term of the expression gives $-10x^2$.

On adding:

$-7x^2 + (-10x^2) = -7x^2 -10x^2$

$= (-7-10)x^2$

$= -17x^2$

(vi) Term to be subtracted = $a^2 - b^2$

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

On adding:

$b^2 - a^2 + (-a^2 + b^2) = b^2 - a^2 -a^2 + b^2$

$= (1+1)b^2 +(-1-1) a^2$

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

Q5

Answer :

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

(i) Term to be subtracted = $5a + 7b - 2c$

Changing the sign of each term of the expression gives $-5a -7b + 2c$.

On adding:

$(3a - 7b + 4c)+(-5a -7b + 2c) = 3a - 7b + 4c-5a -7b + 2c$

$= (3-5)a+(- 7-7)b + (4+2)c$

$= -2a - 14b + 6c$

(ii) Term to be subtracted = $a - 2b - 3c$

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

On adding:

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

$= (-2-1)a + (5+2)b +(-4+3)c$

$= -3a + 7b - c$

(iii) Term to be subtracted = $5x^2 - 3xy + y^2$

Changing the sign of each term of the expression gives $-5x^2 + 3xy - y^2$.

On adding:

$(7x^2 - 2xy - 4y^2)+(-5x^2 + 3xy - y^2) = 7x^2 - 2xy - 4y^2-5x^2 + 3xy - y^2$

$= (7-5)x^2 +(-2+3)xy +(-4-1)y^2$

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

(iv) Term to be subtracted = $6x^3 - 7x^2 + 5x - 3$

Changing the sign of each term of the expression gives $-6x^3 + 7x^2 - 5x + 3$.

On adding:

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

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

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

(v) Term to be subtracted = $x^3 + 2x^2y + 6xy^2 - y^3$

Changing the sign of each term of the expression gives $-x^3 - 2x^2y - 6xy^2 + y^3$.

On adding:

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

$= -x^3 +(- 2-4)x^2y +(-6-3)xy^2 + (1+1)y^3$

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

(vi) Term to be subtracted = $-11x^2y^2 + 7xy - 6$

Changing the sign of each term of the expression gives $11x^2y^2 - 7xy + 6$.

On adding:

$(9x^2y^2 - 6xy + 9) + (11x^2y^2 - 7xy + 6) = 9x^2y^2 - 6xy + 9 + 11x^2y^2 - 7xy + 6$

$= (9+11)x^2y^2 (-7-6)xy + 15$

$= 20x^2y^2 - 13xy + 15$

(vii) Term to be subtracted = $-2a + b + 6d$

Changing the sign of each term of the expression gives 2a-b-6d.

On adding:

$(5a - 2b - 3c) + (2a-b-6d) = 5a - 2b - 3c + 2a - b - 6d$

$= (5+2)a + (-2-1)b - 3c - 6d$

$= 7a - 3b - 3c - 6d$

Q6

Answer :

(i) $2p^3 - 3p^2 + 4p - 5 - 6p^3 + 2p^2 - 8p - 2 + 6p + 8$

Rearranging and collecting the like terms

$= (2-6)p^3 + (-3+2)p^2 + (4-8+6)p - 5-2+8$

$= -4p^3 - p^2 + 2p + 1$

(ii) $2x^2 - xy + 6x - 4y + 5xy - 4x + 6x^2 + 3y$

Rearranging and collecting the like terms

$= (2+6)x^2 + (-1+5)xy + (6-4)x + (-4+3)y$

$= 8x^2 + 4xy + 2x - y$

(iii) $x^4 - 6x^3 + 2x - 7 + 7x^3 - x + 5x^2 + 2 - x^4$

Rearranging and collectingthe like terms

$= (1-1)x^4 + (-6+7)x^3 + 5x^2 + (2-1)x - 7 + 2$

$= 0 + x^3 + 5x^2 + x - 5$

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

Q7

Answer :

Adding:

$(3x^2 - 5x + 2) + (-5x^2 - 8x + 6)$

Rearranging and collecting the like terms:

$(3-5)x^2 + (-5-8)x + 2 + 6$

$= -2x^2 - 13x + 8$

Subtract $4x^2 - 9x + 7$ from $-2x^2 - 13x + 8$.

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

Term to be subtracted = $4x^2 - 9x + 7$

Changing the sign of each term of the expression gives $-4x^2 + 9x - 7$.

On adding:

$(-2x^2 - 13x + 8) + (-4x^2 + 9x - 7) = -2x^2 - 13x + 8 - 4x^2 + 9x - 7$

$= (-2-4)x^2 + (-13+9)x + 8 - 7$

$= -6x^2 - 4x + 1$

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