Exercise 19(B)

1. i) $(3a+4b+7c)+(-5a+3b-6c)+(4a-2b-4c)$

$= 3a+4b+7c-5a+3b-6c+4a-2b-4c$

$= 3a-5a+4a+4b+3b-2b+7c-6c-4c$

$= 2a+5b-3c$

ii) $(2x^2+xy-y^2)-(x^2+2xy+3y^2)+(3x^2-10xy+4y^2)$

Ans $\Rightarrow (2x^2+xy-y^2)-(x^2+2xy+3y^2)+(3x^2-10xy+4y^2)$

$= 2x^2+xy-y^2-x^2-2xy-3y^2+3x^2-10xy+4y^2$

$= 2x^2-x^2+3x^2+xy-2xy-10xy-y^2-3y^2+4y^2$

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

iii) ~~$(x^2-x+1)+(5x^2+2x-2)+(3x^2-3x+1)$~~

~~Ans $\Rightarrow x^2-x+1+5x^2+2x-2+3x^2-3x+1$~~

2. Add the following expressions:

iii) $(a^3-2b^3+a)+(b^3-2a^3+b)+$ ~~and~~

$+(-2b+2b^3-5a+4a^3)$

$= a$

Ans $\Rightarrow a^3-2b^3+a+b^3-2a^3+b+-2b+2b^3-5a+4a^3$

$= a^3 - 2a^3 + 4a^3 - 2b^3 + b^3 + 2b^3 + a - 5a + b - 2b$

$-2b = 3a^3 + b^3 - 4a - b$

3. i) $3a - (a + 2b)$

$= 3a - a - 2b$

$= 2a - 2b$

ii) $(8x + 7y) - (4y - 3x)$

Ans> $8x + 7y - 4y + 3x$

$= 8x + 3x + 7y - 4y$

$= 11x + 3y$

iii) $(6y - 13) - (4 - 7y)$

Ans> $6y - 13 - 4 + 7y$

$= 6y + 7y - 13 - 4$

$= 13y - 17$

4. i) $5a - 3b + 2c$ from $a - 4b - 2c$

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

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

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

$= -4a - b - 4c$

vi) $2ab+cd-ac-2bd$ from $ab-2cd+2ac+bd$

Ans $(ab-2cd+2ac+bd)-(2ab+cd-ac-2bd)$

$= ab-2cd+2ac+bd-2ab-cd+ac+2bd$

$= ab-2ab-2cd-cd+2ac+ac+bd+2bd$

$= -ab-3cd+3ac+3bd$

5. i) Take $-ab+bc-ca$ from $ab+2bc-ca$

ii) Take $-ab+bc-ca$ from $bc-ca+ab$

Ans $(bc-ca+ab)-(-ab+bc-ca)$

$= bc-ca+ab+ab-bc+ca$

$= bc-bc-ca+ca+ab+ab$

$= 2ab$

iv) Take $1-a+a^2$ from a^2+a+1

Ans $(a^2+a+1)-(1-a+a^2)$

$= a^2+a+1-1+a-a^2$

$= a^2-a^2+a+a+1-1$

$= 2a$

6. From the sum of $x+y-2z$ and $2x-y+z$ subtract $x+y+z$

Ans> ~~$(x+y+z) - [(x+y-2z) + (2x$~~

$[(x+y-2z)+(2x-y+z)] - (x+y+z)$

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

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

$= 2x-2y-2z$

7. From the sum of $3a-2b+4c$ and $3b-2c$ subtract $a-b-c$

Ans> $[(3a-2b+4c)+(3b-2c)] - (a-b-c)$

$= 3a-2b+4c+3b-2c-a+b+c$

$= 3a-a-2b+3b+b+4c-2c+c$

$= 2a+2b+3c$

8. Subtract $x-2y-z$ from the sum of $3x-y+z$ and $x+y-3z$

Ans> $[(3x-y+z)+(x+y-3z)] - (x-2y-z)$

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

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

$= 3x + 2y - 3z$

q. Subtract the sum of $x+y$ and $x-z$ from the sum of $x-2z$ and $x+y+z$

Ans $\Rightarrow [(x-2z) + (x+y+z)] - [(x+y) + (x-z)]$

$= [x - 2z + x + y + z] - [x + y + x - z]$

$= (2x - z + y) - (2x + y - z)$

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

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

$= 0$