Class-6 SCHOOL NO-4658

Exercise: 19-(B) Name: Subhashree panigrahi, Sec-D

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

ii) $2x^2+xy-y^2$, $-x^2+2xy+3y^2$, $3x^2-10xy+4y^2$, $4x^2-7xy+6y^2$

iii) x^2-x+1, $-5x^2+2x-2$, $+3x^2-3x+1$, $-x^2-2x$

iv) $a^2-ab+bc$, $-2a^2+2ab+bc$, $+3a^2+ab-3bc$, $2a^2+2ab-5c$

v) $4x^2+7-3x$, $-x^2+8+4x$, $+-2x^2-10+5x$, $-x^2+5+6x$

vi) $3x+4xy-y^2$, $-4x+xy+2y^2$, $+6x-xy+3y^2$, $5x+4xy+4y^2$

2) i) $-17x^2-2xy+23y^2$, $-9y^2+15x^2+7xy$ and $13x^2+3y^2-4xy$

ans) $(-17x^2-2xy+23y^2)+(-9y^2+15x^2+7xy)+(13x^2+3y^2-4xy)$

$=-17x^2-2xy+23y^2-9y^2+15x^2+7xy+13x^2+3y^2-4xy$

$=15x^2+13x^2-17x^2+23y^2+3y^2-9y^2+7xy-2xy-4xy$

$=11x^2+17y^2+xy$

ii) $-x^2-3xy+3y^2+8$, $3x^2-5y^2-3+4xy$ and $-6xy+2x^2-2+y^2$

ans) $(-x^2-3xy+3y^2+8)+(3x^2-5y^2-3+4xy)+(-6xy+2x^2-2+y^2)$

$=-x^2-3xy+3y^2+8+3x^2-5y^2-3+4xy-6xy+2x^2-2+y^2$

$=3x^2+2x^2-x^2+3y^2+y^2-5y^2+4xy-3xy-6xy+8-3-2$

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

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

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

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

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

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

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

$= 3a-a-2b$

$= 2a-2b$

(ii) $(5x-3y)-(x+y)$

$= 5x-3y-x-y$

$= 5x-x-3y-y$

$= 4x-4y$

(iii) $(8a+15b)-(3b-7a)$

$= 8a+15b-3b+7a$

$= 8a+7a+15b-3b$

$= 15a+12b$

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

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

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

$= 11x+3y$

(v) $7-(4a-5)$

$= 7-4a+5$

$= 7+5-4a$

$= 12-4a$

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

$= 6y-13-4+3y$

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

$= 13y-17$

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

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

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

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

$= -4a-b-4c$

(ii) $4x-6y+3z$ from $12x+7y-21z$

$= 12x+7y-21z-(4x-6y+3z)$

$= 12x+7y-21z-4x+6y-3z$

$= 12x-4x+7y+6y-21z-3z$

$= 8x+13y-24z$

iii) $5-a-4b+4c$ from $5a-7b+2c$

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

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

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

$= 6a-3b-2c-5$

iv) $-8x-12y+17z$ from $x-y-z$

$= x-y-z-(-8x-12y+17z)$

$= x-y-z+8x+12y-9z$

$= x+8x+12y-y-z-17z$

$= 9x+11y-18z$

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

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

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

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

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

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

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

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

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

$= 2ab$

ii) Take $5x+6y-3z$ from $3x+5y-4z$

$= 3x+5y-4z-(5x+6y-3z)$

$= 3x+5y-4z-5x-6y+3z$

$= 3x-5x+5y-6y-4z+3z$

$= -2x-y-z$

iii) Take $-\frac{3}{2}p+q-r$ from $\frac{1}{2}p-\frac{1}{3}q-\frac{3}{2}r$.

$= \frac{1}{2}p-\frac{1}{3}q-\frac{3}{2}r-\left(-\frac{3}{2}p+q-r\right)$

$= \frac{p}{2}-\frac{q}{3}-\frac{3r}{2}+\frac{3p}{2}-q+r$

$= \frac{p}{1}+\frac{3p}{2}-\frac{q}{3}-q+r-\frac{3r}{2}$

$= \frac{p+3p}{2}-\frac{q-3q}{3}+\frac{2r-3r}{2}$

$= \frac{4p}{2}-\frac{4q}{3}-\frac{r}{2}$

$= 2p-\frac{4}{3}q-\frac{1}{2}r$

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

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

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

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

$= 2a$

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

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

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

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

$= 2x-y-2z$

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

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

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

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

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

$(x-2z)+(x+y+z)-\{(x+y)+(x-z)\}$
$x-2z+x+y+z-(x+y+x-z)$
$x+x+y+z-2z-(x+x+y-z)$
$2x+y-z-(2x+y-z)$
$2x+y-z-2x-y+z$
$2x-2x+y-y+z-z$
0