x) $6x^2y - 2xy^2 + 5x^2y - xy^2$
$= 11x^2y - 3xy^2$

Ex 19(B)

b) i) $(3a + 4b + 7c) + (-5a + 3b - 6c) + (4a - 2b - 4c)$
$= 3a + 4b + 7c - 5a + 3b - 6c + 4a - 2b - 4c$
$= 3a + 4a - 5a + 4b + 3b - 2b + 7c - 6c - 4c$
$= 7a - 5a + 7b - 2b + 7c - 10c$
$= 2a + 5b - 3c$

ii) $(2x^2 + xy - y^2) + (x^2 + 2xy + 3y^2) + (3x^2 - 10xy + 4y^2)$
$= 2x^2 + xy - y^2 - x^2 + 2xy + 3y^2 + 3x^2 - 10xy + 4y^2$
$= 2x^2 + 3x^2 - x^2 + xy + 2xy - 10xy + 3y^2 + 4y^2 - y^2$
$= 5x^2 - x^2 + 3xy - 10xy + 7y^2 - y^2$
$= 4x^2 - 7xy + 6y^2$

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

iv) $(a^2 - ab + bc) + (2ab + bc - 2a^2) + (-3bc + 3a^2 + ab)$
$= 4a^2 - 2a^2 + 3ab - ab + 2bc - 3bc$
$= 2a^2 + 2ab - bc$

v) $(4x^2 + 7 - 3x) + (4x - x^2 + 8) + (-10 + 5x - 2x^2)$
$= 4x^2 - 3x^2 + 15 - 10 + 9x - 3x = x^2 + 5 + 6x$

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

$= 9x - 4x + 5xy - xy + 5y^2 - y^2$

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

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

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

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

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

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

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

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

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

Exercise - 14(B)

Q, Evaluate:

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

(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) $7-(4a-5)$
$=7-4a-5$
$=7-5-4a$
$=2-4a$

(vi) $(6y-13)-(4-7y)$
$=6y-13-4-7y$
$=6y-7y-13-4$
$=-y-9$

Q) Subtract:

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

$$\begin{array}{r} 5a - 3b + 2c \\ +\,1a - 4b - 2c \\ \hline -4a - 1b - 4c \end{array} \quad \begin{array}{l} a - 4b - 2c \\ = 5a - 3b + 2c \end{array}$$

(ii) $(8x + 7y - 2z) - (4x - 6y + 3z)$

$= 8x + 13y - 2z$

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

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

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

$= 9x + 11y - 18z$

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

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

ii) $4.8, 6.8b$

$= 6.8b - 4.8b = 2b$

iii) $3.6abc, 10.5abc$

$= 10.5abc - 3.5abc$

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

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

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

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

Sol:- i) $(bc - ca + ab) - (-ab + bc - ca)$

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

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

$= 2ab$

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

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

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

$= -2x - y - z$

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

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

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

$= \frac{3p + 9p - 2q - 6q - 9r + 6r}{6}$

(since L.C.M. = 6)

$$= \frac{12p}{6} - \frac{8q}{6} - \frac{3r}{6}$$

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

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

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

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

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Ex 19(B)

6) From the sum of $x+y-2z$ and $3x-y+z$ subtract $x+y+z$.

Sum

$$\begin{array}{r} x+y-2z \\ +2x-y+z \\ \hline 3x-z \end{array}$$ ✓

Subtract

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

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 $x+y-3z$.

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

Sum

$$\begin{array}{r} 3x-y+z \\ +x-y-3z \\ \hline 4x-2z \end{array}$$

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

Ans

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

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

$=\{x-2z+2x+y+z\}-\{x+y+x-z\}$

$=\{x+x+y-2z+z\}-\{x+x+y-z\}$

$=\{2x+y-z\}-\{2x+y-z\}$

$=\{2x+y-z-2x-y+z\}$

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

$=0+0+0=0$

$=0$ Ans

Multiples.

Product focussed in exponents.

$a^m \times a^n = a^{m+n}$

$10^2 \times 10^3 = 10^{2+3} = 10^5$

$2^2 \times 2^4 = 2^{2+4} = 2^6$

$10^2 = 10 \times 10 = 100$

$a^n \times b^n = (ab)^n$

$2^2 \times 3^2 = 2 \times 3^2 = 6^2$

$= 6 \times 6$

$= 36$

$2^2 \times 2^2$

$= (2^2)^2 = (2)^{2\times 2} = (2)^4$

$10 \times 10 = (10)^2$

$2 \times 2 \times 3 \times 3 = 36$