FUNDAMENTAL OPERATIONS

Ch-19

Ex-19(A)

26.7.21

Q1) i) $5+4 = 9$ and $5x+4x = 9x$

ii) $5x+4x^2+18 = 30$ and $12x^2y + 18x^2y = 30x^2y$

iii) $7+16 = 23$ and $7a+16b = 7a+16b$

iv) $1+3 = 4$ and $x^2y + 3xy^2 = x^2y + 3xy^2$

v) $7-4 = 3$ and $7ab \div 4ab = 3ab$

vi) $12-5 = 7$ and $12x - 5y = 12x - 5y$

vii) $35 - 16 = 19$ and $35ab - 16ba = 19ab$

viii) $28 - 13 = 15$ and $28ax^2 - 13a^2x = 28ax^2 + 13a^2x$

Q2) i) The sum of -2 and $-5 = -7$ and the sum of $-2x$ and $-5x = -7x$

ii) The sum of 8 and $-3 = 5$ and the sum of $8ab$ and $-3ab = 5ab$

iii) The sum of -15 and $-4 = -19$ and the sum of $-15x$ and $-4y = -15x-4y$

iv) $15+8+3 = 26$ and $15x+8y+3x = 18x+8y$

v) $12-9+15 = 18$ and $12ab - 9ab + 15ba = 18ab$

vi) $25-7-9 = 9$ and $25xy - 7xy - 9yx = 9xy$

vii) $-4-6-5 = -15$ and $-4ax - 6ax - 5ay = -10ax - 5ay$

Q3) i) $8xy + 3xy = 11xy$

ii) $2xyz + xyz + 6xyz = 9xyz$

iii) $2a + 2ab + 4b = 5a + 4b$

iv) $3x + 2y = 3xy + 2y$

v) $5m + 3n + 4p = 5m + 3n + 4p$

vi) $6a + 3a + 9ab = 9a + 9ab$

vii) $3p + 4q + 9q = 3p + 13q$

viii) $5ab + 4ba + 6b = 9ab + 6b$

ix) $50pq + 30pq + 10pr = 80pq + 10pr$

x) $-2xy + -y + -3y = -6y$
$-b$

xi) $-3b + (-b) = -4b$

xii) $5b + -4b + -10b = -9b$

xiii) $-2c + -c + -5c = -8c$

Q4) i) $6a - a - 5a - 2a$

$= (6a - a) - (5a - 2a) = (6 - 1 - 5 - 2)a$

$= 5a - 3a = (6 - 8)a$

$= 2a \quad = -2a$

ii) $2b - 3b - b + 4b$

$= 2b(b + 4b) - (3b - 2b)(4b - b) + (3b - 2b)$

$= 5b - 1b \quad 3b + 1b \quad (2 - 3 - 1 + 4)b$

$= 4b \quad (6 - 4)b = 2b$

iii) $3x - 2x - 4x + 7x$

$= (7x - 3x) - (4x - 2x) \quad (3 - 2 - 4 + 7)x$

$= 4x - 2x \quad (10 - 6)x$

$= 2x \quad 4x$

iv) $5ab + 2ab - 6ab + ab$

$= (5ab + 2ab) - (6ab + ab) \quad (5 + 2 - 6 + 1)ab$

$= 7ab - 7ab \quad (8 - 6)ab$

$= 0 \quad 2ab$

iv) $8x - 5y - 3x + 10y$

$= (8x - 3x) + (-5y + 10y)$

$= 5x + 15y$

v) $8x - 5y - 3x + 10y$

$= 8x - 3x - 5y + 10y$

$= (8 - 3)x + (10 - 5)y$

$= 5x + 5y$

Q5. i) $-7x + 9x + 2x - 2x$

$= (-7 + 9 + 2 - 2)x$

$= (11 - 9)x$

$= 2x$

ii) $5ab - 2ab - 8ab + 6ab$

$= (5 - 2 - 8 + 6)ab$

$= (11 - 10)ab$

$= 1ab.$

iii) $-8a - 3a + 12a + 13a - 6a$

$= (-8 - 3 + 12 + 13 - 6)\, a$

$= (25 - 17)\, a$

$= 8a$

iv) $19abc - 11abc - 12abc + 14abc$

$= (19 - 11 - 12 + 14)\, abc$

$= (33 - 23)\, abc$

$= 10abc$

(26) i) $4ab, 6ba$

ans. $6ba - 4ab$

$= (6 - 4)\, ab$

$= 2ab$

ii) $4.8b, 6.8b$

ans $6.8b - 4.8b$

$= (6.8 - 4.8)\, b$

$= 2b$

iii) 3.5abc, 10.5 abc.

ans. $10.5abc - 3.5abc$

$= (10.5 - 3.5)abc$

$= 7abc$

iv) $3\frac{1}{2}mn, 8\frac{1}{2}nm$

ans. $8\frac{1}{2}nm - 3\frac{1}{2}mn$

$= (8\frac{1}{2} - 3\frac{1}{2})nm$

$= 5nm$

Q7) i) $2a^2b^2 + 5ab^2 + 8a^2b^2 - 3ab^2$

$= (2a^2b^2 + 8a^2b^2) + (5ab^2 - 3ab^2)$

$= 10a^2b^2 + 2ab^2$

ii) $4a + 3b - 2ab - b$

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

$= 2a + 2b$

iii) $2xy + 4yz + 5xy + 3yz - 6xy$

$= (2xy + 5xy - 6xy) + (4yz + 3yz)$

$= 8xy + 7yz$

(iv) $ab + 15ab - 11ab - 2ab$.

$= (1 + 15 - 11 - 2)ab$

$= (16 - 13)ab$

$= 3ab$

(v) $6a^2 - 3b^2 + 2a^2 + 5b^2 - 4a^2$

$= (6a^2 + 2a^2 - 4a^2) + (5b^2 - 3b^2)$

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

vi) $8abc + 2ab - 4abc + ab$

$= (8abc - 4abc) + (2ab + ab)$

$= 4abc + 3ab$

vii) $9xyz + 15yxz - 10zyx - 2zxy$

$= (9 + 15 - 10 - 2)zyx$

$= (24 - 12)zyx$

$= 12zyz$

viii) $13pqr + 2p + 4q - 6pqr + 5pqr$

$= (13 - 6 + 5)pqr + 2p + 4q$

$= 12pqr + 2p + 4q$

iv) $4ab + 0 - 2ba$

$= (4ab - 2)\,ba$

$= 2ba$

v) $6x^2y - 2xy^2 + 5x^2y - xyz^2$

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

$= 11x^2y - 3xy^2$