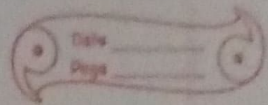


CW
26/07/21

Chapter - 19

Fundamental concepts



$$2+3=5, \quad 2x+3x=5x$$

$$7-5=2, \quad 7a-5a=2a$$

$$12-9=3, \quad 12x^2-9x^2=3x^2$$

$$20-13=7, \quad 20xy-13xy=7xy$$

$$3+2=5, \quad 3a^2b+2a^2b=5a^2b$$

$$6+9=15, \quad 6a+9b=\del{6a+9b} 6a+9b$$

$$8+7=15, \quad 8ab+7a=8ab+7a$$

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

Exercise - 19 (A)

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

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

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

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

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

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

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

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

2) 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) $-4(-6(-75) = -15$ and $-4ax - 6ax - 5ay = -10ax - 5ay$.

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

ii) $2xyz + xyz + 6xyz = (2+1+6)xyz = 9xyz$

iii) $2a + 3a + 4b = (2+3)a + 4b = 5a + 4b$.

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

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

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

vii) $3p + 1q + 9q = 3p + (1+9)q = 3p + 10q$.

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

$$ix) 50pq + 30pq + 10pq = (50+30)pq + 10pq = 80pq + 10pq.$$

$$x) -2y + -y + -3y = (-2 + -1 + -3)y = -6y.$$

$$xi) -3b + -b = (-3 + -1)b = -4b.$$

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

$$xiii) (-2c) + (-c) + (-5c) = (-2 + -1 + -5)c = -8c$$

$$1) 6a - a - 5a - 2a = (6 - 1 - 5 - 2)a = 6a - 8a = -2a$$

$$ii) 2b - 3b - b + 4b = 2b + 4b - (3+1)b = 6b - 4b = 2b.$$

$$iii) 3x - 2x - 4x + 7x = 3x + 7x - 2x - 4x = (3+7)x - (2+4)x = 10x - 6x = 4x.$$

$$iv) 5ab + 2ab - 6ab + ab = 5ab + 2ab + ab - 6ab = 8ab - 6ab = 2ab.$$

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

$$5i) -7x + 9x + 2x - 2x = 9x + 2x - (7x) - (-2x) = 11x - 9x = 2x$$

$$ii) 5ab - 2ab - 8ab + 6ab = 5ab + 6ab - 2ab - 8ab = 11ab - 10ab = ab$$

$$iii) -8a - 3a + 12a + 13a - 6a = 12a + 13a - (8a + 3a + 6a) = 25a - 17a = 8a$$

$$iv) 19abc - 11abc - 12abc + 14abc = abc (19 - 11 - 12 + 14) = abc (33 - 23) = 10abc$$