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### Ch-19A Fundamental operations

- Q1) i)  $5+4=9$  and  $5x+4x=9x$   
 ii)  $12+18=30$  and  $12x^2y+18x^2y=30x^2y$   
 iii)  $2+16=18$  and  $2a+16b=2a+16b$   
 iv)  $1+3=4$  and  $x^2y+3xy^2=x^2y+3xy^2$   
 v)  $7-4=3$  and  $7ab-4ab=3ab$
- 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  $12ab-9ab+15ba=18ab$

Q3) i)  $8xy$  and  $3xy$

The addition of  $8xy$  and  $3xy$  is calculated as follows.  
 $8xy + 3xy = 11xy$

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ii)  $2xyz$ ,  $xyz$  and  $6xyz$   
The addition of  $2xyz$ ,  $xyz$  and  $6xyz$  is calculated as follows  

$$2xyz + xyz + 6xyz = 9xyz$$

iii)  $2a$ ,  $3a$  and  $4b$   
The addition of  $2a$ ,  $3a$  and  $4b$  is calculated as follows  

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

iv)  $3x$  and  $2y$   
The addition of  $3x$  and  $2y$  is calculated as follows  

$$3x + 2y = 3x + 2y$$

v)  $5m$ ,  $3n$  and  $4p$   
The addition of  $5m$ ,  $3n$  and  $4p$  is calculated as follows  

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

Q11)  $6a - a - 5a - 2a$   
The value of given expression is calculated as below  

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

$$= (-2)a$$
  

$$= -2a$$
  
 Therefore,  $6a - a - 5a - 2a = -2a$

Q12)  $2b - 3b - b + 4b$   
The value of given expression is ~~calculated~~ calculated as below  

$$2b - 3b - b + 4b = 2b + 4b - (3 + 1)b$$

we get,

$$= 6b - 4b$$

$$= 2b$$

Therefore,  $2b - 3b - 6 + 4b = 2b$

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

The given expression is calculated as below

$$3x - 2x - 4x + 7x = 3x + 7x - 2x - 4x$$

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

$$= 10x - 6x$$

$$= 4x$$

Therefore,  $3x - 2x - 4x + 7x = 4x$

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

The given expression is calculated as below

$$5ab + 2ab - 6ab + ab = 5ab + 2ab + ab - 6ab$$

we get,

$$= 9ab - 6ab$$

$$= 3ab$$

Therefore,  $5ab + 2ab - 6ab + ab = 3ab$

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

The given expression is calculated as below

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

$$= 5x + 5y$$

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

(Q5) i)  $-7x + 9x + 2x - 2x$   
 The value of given expression is calculated as follows.  
 $-7x + 9x + 2x - 2x = 9x + 2x - 7x - 2x$   
 $= 11x - 9x$   
 we get,  
 $2x$   
 Hence,  $-7x + 9x + 2x - 2x = 2x$

ii)  $5ab - 2ab - 9ab + 6ab$   
 The value of given expression is calculated as follows.  
 $5ab - 2ab - 9ab + 6ab = 5ab + 6ab - 9ab - 2ab$   
 we get,  
 $= 11ab - 11ab$   
 $= ab$   
 Hence,  $5ab - 2ab - 9ab + 6ab = ab$

iii)  $-8a - 3a + 12a + 13a - 6a$   
 The value of given expression is calculated as follows  
 $-8a - 3a + 12a + 13a - 6a = 12a + 13a - (8a + 3a + 6a)$   
 $= 25a - 17a$   
 $= 8a$   
 Hence,  $-8a - 3a + 12a + 13a - 6a = 8a$

iv)  $19abc - 11abc - 12abc + 14abc$   
 The value of given expression is calculated as follows  
 $19abc - 11abc - 12abc + 14abc = 19abc$

$$= abc(33 - 23)$$

$$= 10abc$$

$$\text{Hence, } 19abc = 11abc - 12abc + 14abc$$

$$\Rightarrow 10abc$$