

4/10/21

Exercise - 19 'C'

② i) $4n \times 6n \times 2 = 24n^2 \times 2$
 $= 48n^2$

ii) $3ab \times 6an = 18a^2bn$

iii) $m \times 2n^2 \times 3n^3 = 6n^{1+2+3}$
 $= 6n^6$

iv) $5 \times 5a^3 =$

v) $8 \times 6n^2 \times 6n^2y^2 = 216n^{2+2}y^2$
 $= 216n^4y^2$

vi) $8n \times -3n = 24n^2$

vii) $-5 \times -3n \times 5n^3 = 75n^4$

viii) $8 \times -4ny^2 \times 3n^3y^2 = -96n^4y^4$

ix) $-4n \times 5ny \times 3z = -60n^2yz$

x) $5n \times 2n^2y \times -7y^3 \times 2n^3y^2 = -140n^{1+2+3}y^{1+2+2}$
 $= -140n^6y^5$

③ i) $3n^3 \times 5n^4 = 15n^7$

ii) ~~3ab~~ ~~6ac~~ $5a^2 \times 7a^5 = 35a^7$

iii) $3abc \times 6ac^3 = 18a^2bc^4$

$$iv) a^2b^2 \times 5a^3b^4 = 5a^5b^6$$

$$v) 2x^2y^3 \times 5x^3y^4 = 10x^5y^7$$

$$vi) abc \times bcd = abc^2d$$

7) i) $n+2$ and $n+10$

~~$$(n+2) \times (n+10)$$~~
~~$$= (n+2 \times n) + (n+2 \times 10)$$~~

$$(n+2) \times (n+10)$$

$$= n(n+10) + 2(n+10)$$

$$= n^2 + 10n + 2n + 20$$

$$= n^2 + 12n + 20 \text{ (Ans)}$$

ii) $n+5$ and $n-3$

$$(n+5) \times (n-3)$$

$$= n(n-3) + 5(n-3)$$

$$= n^2 - 3n + 5n - 15$$

$$= n^2 + 2n - 15$$

iii) $n-5$ and $n+3$

$$(n-5) \times (n+3)$$

$$= n(n+3) - 5(n+3)$$

$$= n^2 + 3n - 5n - 15$$

$$= n^2 - 2n - 15$$

i) $n-5$ and $n-3$

v) $2n+y$ and $n+3y$

$$(n-5) \times (n-3)$$

$$\begin{aligned} &= n(n-3) - 5(n-3) \\ &= n^2 - 3n - 5n + 15 \\ &= n^2 - 8n + 15 \end{aligned}$$

$$(2n+y) \times (n+3y)$$

$$\begin{aligned} &= 2n(n+3y) + y(n+3y) \\ &= 2n^2 + 6ny + ny + 3y^2 \\ &= 2n^2 + 7ny + 3y^2 \end{aligned}$$

vi) $3n-5y$ and $n+6y$

$$\begin{aligned} &(3n-5y) \times (n+6y) \\ &= 3n(n+6y) - 5y(n+6y) \\ &= 3n^2 + 18ny - 5ny - 30y^2 \\ &= 3n^2 + 13ny - 30y^2 \end{aligned}$$

vii) $n+9y$ and $n-5y$

$$\begin{aligned} &(n+9y) \times (n-5y) \\ &= n(n-5y) + 9y(n-5y) \\ &= n^2 - 5ny + 9ny - 45y^2 \\ &= n^2 + 4ny - 45y^2 \end{aligned}$$

viii) $2n+5y$ and $2n+5y$

$$\begin{aligned} &(2n+5y) \times (2n+5y) \\ &= 2n(2n+5y) + 5y(2n+5y) \\ &= 4n^2 + 10ny + 10ny + 25y^2 \\ &= 4n^2 + 20ny + 25y^2 \end{aligned}$$

Exercise - 19 'a'

$$\begin{aligned} \text{(2) i) } 2x^5 \div x^2 &= \frac{2x^5}{x^2} \\ &= 2x^{5-2} \\ &= 2x^3 \end{aligned}$$

$$\begin{aligned} \text{ii) } 6a^8 \div 3a^3 &= \frac{6a^8}{3} \\ &= \frac{6^2}{3} a^{8-3} \\ &= 2a^5 \end{aligned}$$

$$\begin{aligned} \text{iii) } 20xy \div -5xy &= \frac{20xy}{-5xy} \\ &= -4 \end{aligned}$$

$$\begin{aligned} \text{iv) } -24a^2b^2c^2 \div 6ab &= \frac{-24a^2b^2c^2}{6ab} \\ &= -4a^{2-1}b^{2-1}c^2 \\ &= -4abc^2 \end{aligned}$$

$$\begin{aligned} \text{v) } -5x^2y \div xy^2 &= \frac{-5x^2y}{xy^2} \\ &= -5x^{2-1}y^{1-2} \\ &= -5xy^{-1} \\ &= -5 \times x \times \frac{1}{y} \\ &= \frac{-5x}{y} \end{aligned}$$

vii) $40p^3q^4r^5 \div 10p^3q$

$$= \frac{40p^3q^4r^5}{10p^3q}$$

$$= 4q^{4-1}r^5$$

$$= 4q^3r^5$$

viii) $-64x^4y^3z \div 4x^3y^2z$

$$= \frac{-64x^4y^3z}{4x^3y^2z}$$

$$= -17x^{4-3}y^{3-2}$$

$$= -17xy$$

ix) $35xy^5 \div 7x^2y^4$

$$= \frac{35xy^5}{7x^2y^4}$$

$$= 5x^{1-2}y^{5-4}$$

$$= 5x^{-1}y^1$$

$$= 5 \times \frac{1}{x} \times y$$

$$= \frac{5y}{x}$$

3) i) $\frac{-3m}{4}$ by $2m$

$$= \frac{-3m}{4} \div \frac{2m}{1}$$

$$= \frac{-3m}{4} \times \frac{1}{2m}$$

$$= \frac{-3}{8}$$

ii) $-15p^6q^8$ by $-5p^6q^7$

$$= \frac{-15p^6q^8}{-5p^6q^7}$$

$$= 3q^{8-7}$$

$$= 3q$$

iii) $-21m^5n^7$ by $14m^2n^2$ iv) $36a^4n^5y^6$ by $4n^2a^3y^2$

$$= \frac{-21m^5n^7}{14m^2n^2}$$

$$= \frac{-3m^{5-2}n^{7-2}}{2}$$

$$= \frac{-3m^3n^5}{2} \text{ (Ans)}$$

$$= \frac{36a^4n^5y^6}{4n^2a^3y^2}$$

$$= 9n^{5-2}a^{4-3}y^{6-2}$$

$$= 9n^3ay^4$$

$$= 9an^3y^4 \text{ (Ans)}$$

v) $20n^3a^6$ by $5ny$

$$= \frac{20n^3a^6}{5ny}$$

$$= 4n^{3-1}a^6y$$

$$= 4n^2ya^6 \text{ (Ans)}$$

vi) $\frac{28a^2b^3}{c^2}$ by $4abc$

$$= \frac{28ab^3}{c^2} \div \frac{4abc}{1}$$

$$= \frac{7a^1b^3}{c^2} \times \frac{1}{4abc}$$

$$= \frac{7ab^2}{c^3} \times \frac{1}{c}$$

$$= \frac{7ab^2}{c^3} \text{ (Ans)}$$

vii) $\frac{2a^2}{9b^2}$ by $\frac{3b}{2a}$

$$= \frac{2a^2}{9b^2} \times \frac{3b}{2a}$$

$$= \frac{2a^2}{9b^2} \times \frac{2a}{3b}$$

$$= \frac{4a^3}{27b^3} \text{ (Ans)}$$

viii) $\frac{-5.5n^2}{y}$ by $\frac{11n}{y}$

$$= \frac{-5.5n^2}{y} \times \frac{11n}{11n}$$

$$= \frac{-0.5n^2}{n}$$

$$= -0.5n^{2-1}$$

$$= -0.5n \text{ (Ans)}$$

$$i) \frac{8n^2y^2}{z^2} \text{ by } \frac{8ny}{z}$$

$$= \frac{8n^2y^2}{z^2} \times \frac{z}{8ny}$$

$$= \frac{8n^2y^2z}{nyz^2}$$

$$= 8n^{2-1}y^{2-1}z^{1-2}$$

$$= 8nyz^{-1}$$

$$= 8ny \times \frac{1}{z}$$

$$= \frac{8ny}{z} \text{ (Ans)}$$