4/Oct/21

Maths (H.W)

Ex 19-C

Topic → Ex 19-C Q2, Q3 and Q7; Ex 19-D Q2 & Q3

Q2. FIB [Ex-19 C]

(i) $4x \times 6x \times 2$

$\Rightarrow 24x^2 \times 2 = 48x^2$

(ii) $3ab \times 6ax = 18a^2bx$

$\Rightarrow 18a^2bx$

(iii) $x \times 2x^2 \times 3x^3$

$\Rightarrow 6x^6$

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

$\Rightarrow 25a^3$

~~(v) $6 \times 6x^2$~~

(v) $6 \times 6x^2 \times 6x^2y^2$

$\Rightarrow 216x^4y^2$

(vi) $-8x \times -3x$

$\Rightarrow 24x^2$

(vii) $-5x - 3x \times 5x^2$

$\Rightarrow 75x^2$

(viii) $8x \times -4xy^2 \times 3x^3y^2$

$\Rightarrow -96x^4y^4$

(ix) $-4x + 5xy \times 3z$ ~~$= -20x^2y$~~

$\Rightarrow -4 \times 5 \times 3 \times x^{1+1} \times y \times z$

$= -140x^6y^6 - 60x^2yz$

(x) $5x + 1 \times 2x^2y \times -7y^3 \times 2x^3y^2$

$\Rightarrow 5 \times 2 \times -7 \times 2 \times x^{1+2+3} \times y^{1+3+2}$

$= -140x^6 \quad = 140 \quad = -140x^6y^6$

Q3 ~~FIB~~ Find the value of :

(i) $3x^3 \times 5x^4 = 15x^7$

(ii) $5a^2 \times 7a^7 = 35a^9$

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

(iv)

(v)

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

$\Rightarrow 5a^5b^6$

(v) $2x^2y^3 \times 5x^3y^4$

$\Rightarrow 10x^5y^7$

(vi) $abc \times bcd$

$\Rightarrow ab^2c^2d$

(vii)

Q7. Multiply

(i) $x+2$ and $x+10$

$\Rightarrow (x+2) \times (x+10)$

$\Rightarrow x \times (x+5) + 3 \times (x+5)$

$= x^2 + 5 +$

$= x \times x + x \times 5 + 3 \times x + 3 \times 5 \; 15$

$= x^2 + 5x + 3x + 15$

$= x^2 + 8x + 15$

(ii) $x+5$ and $x-3$

$\Rightarrow$ ~~$x \times (x+3)$~~

$\Rightarrow$ ~~$x \times (x+5) + 5 \times (x-3)$~~

$\Rightarrow x \times (x-3) + 5 \times (x-3)$

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

$= x^2 + 2x - 15$

(iii) ~~$2xy - 5by$ by $4bx$~~ $x-5$ and $x+3$

$\Rightarrow x \times (x+3) - 5 \times (x+3)$

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

$= x^2 - 2x - 15$

(iv) ~~$x-5$ and $x-3$~~

(iv) $x-5$ and $x-3$

$\Rightarrow x \times (x-3) - 5 \times (x-3)$

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

$= x^2 - 8x + 15$

(iv)

(v) $2x + y$ and $x + 3y$

$\Rightarrow 2x \times (x+3y) + y \times (x+3y)$

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

$= 2x^2 + 7xy + 3y^2$

(vi) $3x - 5y$ and $x + 6y$

$\Rightarrow 3x \times (x+6y) - 5y \times (x+6y)$

$= 3x^2 + 18xy - 5yx + 1y$

$= 3x^2 + 13xy + 1y$

(vii) $x + 9y$ and $x - 5y$

$\Rightarrow x \times (x-5y) + 9y \times (x-5y)$

$\Rightarrow x^2 - 5yx + 9yx - 5yx$

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

$= x^2 + 4yx + 4y$

(viii) $2x+5y$ and $2x+5y$

$\Rightarrow 2x \times (2x+5y) + 5y\,(2x+5y)$

$= 2x\ 4x^2 + 10xy + 10xyx + 25y^2$

$= 4x^2 + 20xy + 25y^2$

Q2

Q2 Simplify [Ex - 19 D]

(i) $2x^5 \div x^2 = \dfrac{2x^5}{x^2} = \dfrac{1 \times 2x^{5+2}}{1}$

$\Rightarrow 2x^{5-2} = 2x^3$

(ii) $6a^8 \div 3a^3 = \dfrac{2 \times 3a^8 \times a \times a \times a \times a \times a \times a \times a}{3 \times a \times a \times a}$

$= 2a^5$

(iii) $20xy \div -5xy = \dfrac{20^4 \times x \times y}{-5 \times x \times y}$

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

$= -4x^0y^0 = -4 \times 1 \times 1 = -4$

(iv) $-24a^2b^2c^2 \div 6ab =$

$\Rightarrow \dfrac{-24^4 \times a \times a \times b \times b \times c \times c}{6 \times a \times b} = -4a \times b - 4abcc$

$= -4abc^2$

(v) $-5x^2y \div xy^2 = \frac{-5x^2y}{xy^2}$

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

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

(vi) $40p^3q^4r^5 \div 10p^3q = \frac{40p^3q^4r^5}{10p^3q}$

$= 4p^{3-3}q^{4-1}r^5$

$= 4p^0q^3r^5$

$= 4 \times 1 q^3 r^5$

$= 4q^3r^5$

(vii) $-64x^4y^3z \div 4x^3y = \frac{-64x^4y^3z}{4x^3y}$

$= -16x^{4-3}y^{3-1}z$

$= -16x^1y^2z$

~~(viii) $35xy^5 \div 7x^2y^4$~~

(viii) $35xy^5 \div 7x^2y^4 = \frac{35xy^5}{7x^2y^4} = 5x^{1-2}y^{5-4}$

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

Q3 Divide

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

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

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

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

$= \frac{-15p^6q^8}{-5p^6q^7} = 3q^{8-7} = 3q$

(iii) $-21m^5n^7$ by $14m^2n^2$

$= \frac{-21m^5n^7}{14m^2n^2} = \frac{-3m^{5-2}n^{7-2}}{2}$

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

(iv) $36a^4x^5y^6$ by $4x^2a^3y^2$

$= \frac{36a^4x^5y^6}{4x^2a^3y^2} = 9a^{4-3}x^{5-2}y^{6-2}$

$= 9a^1x^3y^4$

(v)

(v) $20x^3a^6$ by $5xy$

$= \frac{20x^3a^6}{5xy} = 4x^{3-1}a^6y^{-1} = 4x^2a^6y^{-1}$

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

$= \frac{28a^2b^3}{c^2} \div 4abc = \frac{28a^2b^3}{c^2} \times \frac{1}{4abc}$

$= \frac{28a^2b^3}{4abc^3} = 7a^{2-1}b^{3-1}c^{-3}$

$= 7ab^2c^{-3}$

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

$= \frac{2a^2}{9b^2} \times \frac{2a}{3b} = \frac{4a^3}{27b^3}$

(viii) $\frac{-5.5x^2}{y}$ by $\frac{11x}{y} = \frac{-5.5x^2}{y} \div \frac{11x}{y}$

$= \frac{-5.5x^2}{y} \times \frac{y}{11x} = \frac{-5(5x^2}{11x \times 10}$

$= \frac{-55x^2}{11x \times 10} = \frac{-5x^2}{10x} = \frac{-1x^{2-1}}{2}$

(ix) $\frac{64x^2y^2}{z^2}$ by $\frac{8xy}{z}$

$\Rightarrow \frac{64x^2y^2}{z^2} \div \frac{8xy}{z} = \frac{64x^2y^2}{z^2} \times \frac{z}{8xy}$

$= \frac{8x^2y^2z}{z^2xy} = 8x^{2-1}y^{2-1}z^{1-2}$

$= 8xyz^{-1} = \frac{8xy}{z}$