GIRLS' HIGH SCHOOL & COLLEGE,PRAYAGRAJ

WORKSHEET-08

SESSION:2020-21

CLASS- 6(A, B, C, D, E & F)

SUBJECT- MATHEMATICS

NOTE-Parents please ensure that the student takes a reference from any ICSE Mathematics book of class 6. They can also take help from the internet or the link given below.

Link – https://youtu.be/a1dgBLVT6rc

TOPIC – Multiplication and Division of Algebraic expressions

❖ MULTIPLICATION OF ALGEBRAIC EXPRESSIONS-

EXAMPLE :1

Multiply : (i) $8x^2y^3$, $6y^2z^5$ and $3xz^2$

Solution :

(i) $8x^2y^3 \times 6y^2z^5 \times 3xz^2$

= (Multiplication of their coefficients) × (multiplication of their literals)

= $(8 \times 6 \times 3) \times (x^2 \times x) \times (y^3 \times y^2) \times (z^5 \times z^2)$

= $144 \times x^3 \times y^5 \times z^7 = 144x^3y^5z^7$ (Ans.)

Q1.Multiply -

a. $15x^2 \times 2x$

b. $5x^2 \times 6y^3$

c. $7ax^3 \times 19a^3x^2$

d. $6xy \times 5\ x^2y$

e. $x^5 \times x^7$

EXAMPLE :2

Multiplication of $4x^2y - 3xy^2 + 4xy$ and $2xy$

$$= 2xy \times (4x^2y - 3xy^2 + 4xy)$$
$$= (2xy \times 4x^2y) - (2xy \times 3xy^2) + (2xy \times 4xy)$$
$$= 8x^3y^2 - 6x^2y^3 + 8x^2y^2$$

Q2.Multiply -

- **a.** $2x^2 (3x^2y – 3xy + y^3)$
- **b.** $–6a (3a^3 + 5a – 7a^2)$
- **c.** $3yx (2xy^3 – xy –6)$
- **d.** $3x^3y – 8x^2$ and $3xy$

EXAMPLE :3

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

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

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

$= x^2 + 8x + 15$ Ans.

Q3.Multiply –

- **a.** x+3 and x+5
- **b.** 2x + 5y and 2x + 5y
- **c.** x – 5 and x+2
- **d.** x+9y and x–5y
- **e.** x–3 and x+5

❖ DIVISION OF ALGEBRAIC EXPRESSION-

EXAMPLE :4

a. 10 ab ÷ 5a = $\frac{10ab}{5a} = \frac{2\times5\times a\times b}{5\times a} = 2b$

Q4.Divide-

a. $17m^5$ by $3m^4$
b. 3a by 6a
c. 15x by 5x
d. 18y by 9y
e. $14x^3$ by 7x

EXAMPLE :5

(i) Division of $12x^5 - 9x^3$ by $3x^2$

$$= \frac{12x^5}{3x^2} - \frac{9x^3}{3x^2} = 4x^3 - 3x$$

Q5. Divide-

a. $9x^3 - 6x^2$ by 3x
b. $6m^3 - 12m^2 + 2m^4$ by 2m
c. $3a^4x^3 - 6ax^2$ by $-4ax$
d. $15xy^4 + 12x^3y^2 - 3x$ by 3xy
e. $5x + 10x^2 + 20x^4$ by 5x

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