

NCERT SOLUTIONS CLASS-8 MATHS

CHAPTER-9 EXERCISE-9.2

Q.1. For the following pairs of monomials find the product.

(I) $5, 6a$

$$\begin{aligned}\text{Answer: } & 5 \times 6 \times a \\ & = 30a\end{aligned}$$

(II) $-5a, 6a$

$$\begin{aligned}\text{Answer: } & -5a \times 6a \times \\ & = -5 \times a \times 6 \times a \\ & = (-5 \times 6) \times (a \times a) \\ & = -30a^2\end{aligned}$$

(III) $-5a, 6ab$

$$\begin{aligned}\text{Answer: } & -5a \times 6ab \times \\ & = -5 \times a \times 6 \times a \times b \\ & = (-5 \times 6) \times (a \times a \times b) \\ & = -30a^2b\end{aligned}$$

(IV) $5a^3, -4a$

$$\begin{aligned}\text{Answer: } & 5a^3 \times -4a \\ & = 5 \times (-4) \times a \times a \times a \times a \\ & = -20a^4\end{aligned}$$

(V) $5a, 0$

$$\begin{aligned}\text{Answer: } & 5a \times 0 \\ & = 5 \times a \times 0 \\ & = 0\end{aligned}$$

Q.2. Calculate the area of rectangles. Where the pairs of monomials are lengths and breadths respectively.

NOTE: area of rectangle = $length \times breadth$

(a, b)

$$\begin{aligned}\text{Area} &= a \times b \\ &= ab\end{aligned}$$

($10a, 5b$)

$$\begin{aligned}\text{Area} &= 10a \times 5b \\ &= 10 \times 5 \times a \times b \\ &= 50ab\end{aligned}$$

($20p^2, 5q^2$)

$$\begin{aligned}\text{Area} &= 20p^2 \times 5q^2 \\ &= 20 \times 5 \times p^2 \times q^2 \\ &= 100p^2q^2\end{aligned}$$

($4a, 3a^2$)

$$\begin{aligned}\text{Area} &= 4a \times 3a^2 \\ &= 4 \times 3 \times a \times a^2\end{aligned}$$

$$= 12a^3$$

(4ab,3bc)

$$\begin{aligned} \text{Area} &= 4ab \times 3bc \\ &= 4 \times 3 \times a \times b \times b \times c \\ &= 12ab^2c \end{aligned}$$

Q.3. Complete the table of product.

First monomial						
Second monomial	2x	-5y	$3x^2$	-4xy	$7x^2y$	$-9x^2y^2$
2x	$4x^2$					
-5y		$-15x^2y$				
$3x^2$						
-4xy						

Solution:

First monomial						
Second monomial	2x	-5y	$3x^2$	-4xy	$7x^2y$	$-9x^2y^2$
2x	$4x^2$	$-10xy$	$6x^3$	$-8x^2y$	$14x^3y$	$18x^3y^2$
-5y	$-10xy$	$-15x^2y$	$-15x^2y$	$20xy^2$	$-35x^2y^2$	$45x^2y^3$
$3x^2$	$6x^3$	$-15x^2y$	$9x^4$	$-12x^3y$	$21x^4y$	$-27x^4y^2$
-4xy	$-8x^2y$	$20x^2y$	$-12x^3y$	$16x^2y^2$	$-28x^3y^2$	$36x^3y^3$

Q.4. Rectangular boxes with the length, breadth, and height are given respectively. Find the volume.

(I) $5x, 3x^2, 7x^4$

$$\text{Answer: } Volume = 5x \times 3x^2 \times 7x^4 = 5 \times 3 \times 7 \times x \times x^2 \times x^4 = 105x^7$$

(II) $2p, 4q, 8r$

$$\text{Answer: } Volume = 2p \times 4q \times 8r = 2 \times 4 \times 8 \times p \times q \times r = 64pqr$$

(III) $ab, 2a^2b, 2ab^2$

$$\text{Answer: } Volume = ab \times 2a^2b \times 2ab^2 = 2 \times 2 \times ab \times a^2b \times ab^2 = 4a^4b^4$$

(IV) $p, 2q, 3r$

$$\text{Answer: } Volume = p \times 2q \times 3r = 2 \times 3 \times p \times q \times r = 6pqr$$

Q.5. Find the Product of the following:

(I) ab, bc, ca

Answer: $ab \times bc \times ca = a^2b^2c^2$

(II) $x, -x^2, x^3$

Answer: $x \times (-x^2) \times x^3 = -x^6$

(III) $2, 4a, 8a^2, 16a^3$

Answer: $2 \times 4a \times 8a^2 \times 16a^3 = 1024a^6$

(IV) $x, 2y, 3z, 6xyz$

Answer: $x \times 2y \times 3z \times 6xyz = 36x^2y^2z^2$

(V) $m, -mn, mnp$

Answer: $m \times -mn \times mnp = -m^3n^2p$

