

NCERT SOLUTIONS OF Algebraic Exercise 2

Question 1

Find the product of the following pairs of monomials.

(i) $4, 7p$

(ii) $-4p, 7p$

(iii) $-4p, 7pq$

(iv) $4p^3, -3p$

(v) $4p, 0$

Answer:

i) $4 \times 7p = 28p$

ii) $-4p \times 7p = -28p^2$

iii) $-4p \times 7pq = -28p^2q$

iv) $4p^3 \times -3p = -12p^4$

v) $4p \times 0 = 0$

Question 2

Find the areas of rectangles with the following pairs of monomials as their lengths and breadths respectively.

i) (p, q)

ii) $(10m, 5n)$

iii) $(20x^2, 5y^2)$

iv) $(4x, 3x^2)$

v) $(3mn, 4np)$

Answer: Now we know that

Area of rectangle = Length x breadth

So it is multiplication of monomials

(i) $p \times q = pq$

(ii) $10m \times 5n = 50mn$

(iii) $20x^2 \times 5y^2 = 100x^2y^2$

(iv) $4x \times 3x^2 = 12x^3$

(v) $3mn \times 4np = 12mn^2p$

Question 3.

Complete the following table of products:

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

Answer

First Monomial	2x	-5x	3x ²	-4xy	7x ² y	-9x ² y ²
Second Monomial						
2x	4x ²	-10x ²	6x ³	-8x ² y	14x ³ y	-18x ⁴ y ²
-5x	-10x ²	25x ²	-15x ³	20x ² y	-35x ³ y	45x ⁴ y ²
3x ²	6x ³	-15x ³	9x ⁴	-12x ³ y	21x ⁴ y	-27x ⁴ y ²
-4xy	-8x ² y	20x ² y	-12x ³ y	16x ³ y ²	-28x ⁴ y ²	36x ⁴ y ³
7x ² y	14x ³ y	-35x ³ y	21x ⁴ y	-28x ³ y ²	49x ⁴ y ²	-63x ⁴ y ³
-9x ² y ²	-18x ³ y ²	45x ³ y ²	-27x ⁴ y ²	36x ³ y ³	-63x ⁴ y ³	81x ⁴ y ⁴

Question 4

Obtain the volume of rectangular boxes with the following length, breadth and height respectively.

- (i) $5a, 3a^2, 7a^8$
- (ii) $(2p, 4q, 8r)$
- (iii) $xy, 2x^2y, 2xy^2$
- (iv) $(a, 2b, 3c)$

Answer: We know that volume of rectangular box is given by

Volume = length x breadth x height

(i) $5a \times 3a^2 \times 7a^8 = 105a^{11}$

(ii) $2p \times 4q \times 8r = 64pqr$

(iii) $xy \times 2x^2y \times 2xy^2 = 4x^4y^4$

(iv) $a \times 2b \times 3c = 6abc$

Question 5

Obtain the product of

- (i) xy, yz, zx
- (ii) $a, -a^2, a^3$
- (iii) $2, 4y, 8y^2, 16y^3$
- (iv) $a, 2b, 3c, 6abc$
- (v) $m, -mn, mnp$

Answer:

(i) $x^2y^2z^2$

(ii) $-a^5$

(iii) $1024y^6$

(iv) $36a^2b^2c^2$

(v) $-m^3n^2p$

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