

[Download Doubtnut Now](#)**EXERCISE 9.1 - Question No. 1**

Identify the terms, their coefficients for each of the following

expressions. (i) $5xyz^2 - 3zy$ (ii) $1 + x + x^2$ (iii)

$4x^2y^2 - 4x^2y^2z^2 + z^2$ (iv) $3 - pq + qr - rp$ (v) $\frac{x}{2} + \frac{y}{2} - xy$ (vi)

$03a - 06ab + 05b$

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EXERCISE 9.1 - Question No. 2

Classify the following polynomials as monomials, binomials,

trinomials. Which polynomials do not fit in any of these three

categories?

$$x + y, 1000, x + x^2 + x^3 + x^4, 7 + y + 5x, 2y - 3y^2, 2y - 3y^2 + 4y^3, \\ ab + bc + cd + da, pqr, p^2q + pq^2, 2p + 2q$$

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EXERCISE 9.1 - Question No. 3

Add the following. (i) $ab - b, bc - ca, ca - ab$ (ii)

$$a - b + ab, b - c - a + bc, c - a + ac \text{ (iii)}$$

$$2p^2q^2 - 3pq + 4, 5 + 7pq - 3p^2q^2 \text{ (iv)}$$

$$l^2 + m^2, m^2 + n^2, n^2 + l^2, 2lm + 2mn + 2nl$$

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EXERCISE 9.1 - Question No. 4

(a) Subtract $4a - 7ab + 3b + 12$ from $12a - 9ab + 5b$ (r) Subtract

$3xy + 5yz - 7zx$ from $5xy - 2yx + 10xyz$ (jj) Subtract

$4p^2q - 3pq + 5pq^2 - 8p + 7q - 10$ from

$18 - 3p - 11q + 5pq - 2pq^2 + 5p^2q$

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EXERCISE 9.2 - Question No. 1

Find the product of the following pairs of monomials. (i) $4, 7p$ (ii)

$-4p, 7p$ (iii) $-4p, 7pq$ (iv) $4p^3, -3p$ (v) $4p, 0$

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EXERCISE 9.2 - Question No. 2

Find the areas of rectangles with the following pairs of monomials as their lengths and breadths respectively (p, q); (10m, 5n); (20x², 5y²); (4x, 3x²); (3mn, 4np)

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EXERCISE 9.2 - Question No. 3

Complete the table of products. It

$2x$	$-5y$		
$3x^2$	$-4xy$	$7x^2y$	$-9x^2y^2$
$2x$	$4x^2$
...	...	$-5y$...
...	$-15x^2y$
$3x^2$

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EXERCISE 9.2 - Question No. 4

Obtain the volume of rectangular boxes with the following length, breadth and height respectively. (i) $5a$, $3a^2$, $7a^4$ (ii) $2p$, $4q$, $8r$ (iii) xy , $2x^2y$, $2xy^2$ (iv) a , $2b$, $3c$

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EXERCISE 9.2 - Question No. 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) $m, -mn, mnp$

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EXERCISE 9.3 - Question No. 1


Carry out the multiplication of the expressions in each of the following

pairs. (i) $4p, q + r$ (ii) $ab, a - b$ (iii) $a + b, 7a^2b^2$ (iv) $a^2 - 9, 4a$ (v)

$pq + qr + rp, 0$

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EXERCISE 9.3 - Question No. 2

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 - (iii)andamp; pandamp; 6p² - 7p + 5andamp; ...
 - (iv)andamp; 4p²q²andamp; p² - q²andamp; ...
 - (v)andamp; a + b + candamp; abcandamp; ...

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EXERCISE 9.3 - Question No. 3

Find the product. (i) $(a^2) \times (2a^{22}) \times (4a^{26})$ (ii)

$$\left(\frac{2}{3}xy\right) \times \left(\frac{-9}{3}xy\right) \times \left(\frac{-9}{10}x^2y^2\right) \text{ (iii)}$$

$$\left(-\frac{10}{3}p^3q\right) \times \left(\frac{6}{5}p^3q\right) \text{ (iv) } x \times x^2 \times x^3 \times x^4$$

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EXERCISE 9.3 - Question No. 4

(a) Simplify $3 \times (4x - 5) + 3$ and find its values for (i) $x = 3$ (ii)

$x = \frac{1}{2}$. (j) simplify $a(a^2 + a + 1) + 5$ and find its value for (i)

$a = 0$ (ii) $a = 1$ (iii) $a = -1$

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EXERCISE 9.3 - Question No. 5

(a) Add: $p(p - q)$, $q(q - r)$ and $r(r - p)$ (l) add:

$2x(z - x - y)$ and $2y(z - y - x)$ (w) Subtract:

$3l(l - 4m + 5n)$ and $4l(10n - 3m + 2l)$ (ii) (d) Subtract:

$3a(a + b + c) - 2b(a - b + c)$ and $4c(-a + b + c)$

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EXERCISE 9.4 - Question No. 1

Multiply the binomials. (i) $(2x + 5)$ and $(4x - 3)$ (ii)

$(y - 8)$ and $(3y - 4)$ (iii) $(25l - 05m)$ and $(25l + 05m)$ (iv)

$(a + 3b)$ and $(x + 5)$ (v) $(2pq + 3q^2)$ and $(3pq - 2q^2)$ (vi)

$\left(\frac{3}{4}(a^2) + 3b^2\right)$ and $\left((a^2) - \frac{2}{3}(b^2)\right)$

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EXERCISE 9.4 - Question No. 2

Find the product. (i) $(5 - 2x)(3 + x)$ (ii) $(x + 7y)(7x - y)$ (iii)

$(a^2 + b)(a + b^2)$ (iv) $(p^2 - q^2)(2p + q)$

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EXERCISE 9.4 - Question No. 3

Simplify. (i) $(x^2 - 5)(x + 5) + 25$ (ii) $(a^2 + 5)(b^3 + 3) + 5$ (iii)

$(t + s^2)(t^2 - s)$ (iv)

$(a + b)(c - d) + (9a - b)(c + d) + 2(ac + bd)$ (v)

$(x + y)(2x + y) + (x + 2y) + (x + 2y)(x - y)$ (vi)

$(x + y)(x^2 - xy + y^2)$ (vii)

$(1.5x - 4y)(1.5x + 4y + 3) - 4.5x + 12y$ (viii)

$(a + b + c)(a + b - c)$

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EXERCISE 9.5 - Question No. 1

Use a suitable identity to get each of the following products. (i)

$(x + 3)(x + 3)$ (ii) $(2y + 5)(2y + 5)$ (iii) $(2a - 7)(2a - 7)$ (iv)

$\left(3a - \frac{1}{2}\right)\left(3a - \frac{1}{2}\right)$ (v) $(1.1m - 0.4)(1.1m + 0.4)$ (vi)

$(a^2 + b^2)(-a^2 + b^2)$ (vii) $(6x - 7)(6x + 7)$ (viii)

$(-a + c)(-a + c)$ (ix) $\left(\frac{x}{2} + \frac{3y}{4}\right)\left(\frac{x}{2} + \frac{3y}{4}\right)$ (x)

$(7a - 9b)(7a - 9b)$

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EXERCISE 9.5 - Question No. 2

Use the identity $(x + a)(x + b) = x^2 + (a + b)x + ab$ to find the following products. (i) $(x + 3)(x + 7)$ (ii) $(4x + 5)(4x + 1)$ (iii) $(4x + 5)(4x + 1)$ (iv) $(4x + 5)(4x - 1)$ (v) $(2x + 5y)(2x + 3y)$ (vi) $(2a^2 + 9)(2a^2 + 5)$ (vii) $(xyz - 4)(xyz - 2)$

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EXERCISE 9.5 - Question No. 3

Find the following squares by using the identities. (i) $(b - 7)^2$ (ii) $(xy + 3z)^2$ (iii) $(6x^2 - 5y)^2$ (iv) $\left(\frac{2}{3}(m) + \frac{3}{2}(n)\right)^2$ (v) $(0.4p - 0.5q)^2$ (vi) $(2xy + 5y)^2$

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EXERCISE 9.5 - Question No. 4

Simplify. (i) $(a^2 - b^2)^2$ (ii) $(2x + 5)^2 - (2x - 5)^2$ (iii)

$(7m - 8n)^2 + (7m + 8n)^2$ (iii) $(4m + 5n)^2 + (5m + 4n)^2$ (iv)

$(2.5p - 1.5q)^2 - (1.5p - 2.5q)^2$ (v) $(ab + ba)^2 - 2ab^2c$ (vi)

$(m^2 - n^2m)^2 + 2m^3n^2$

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EXERCISE 9.5 - Question No. 5

Show that. (i) $(3x + 7)^2 - 84x = (3x - 7)^2$ (ii)

$(9p - 5q)^2 + 180pq = (9p + 5q)^2$ (iii)

$(43(m) - 34(n))^2 + 2mn = 169(m^2) + 916(n^2)$ (iv)

$(4pq + 3q)^2 - (4pq - 3q)^2 = 48pq^2$ (v)

$(a - b)(a + b) + (b - c)(b + c) + (c - a)(c + a) = 0$

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EXERCISE 9.5 - Question No. 6

Using identities, evaluate. (i) 71^2 (ii) 99^2 (iii) 102^2 (iv) 998^2 (v) 5.2^2

(vi) 297×303 (vii) 78×82 (viii) 892 (ix) 105×95 Type here in

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EXERCISE 9.5 - Question No. 7

Using $a^2 - b^2 = (a + b)(a - b)$, find (i) $51^2 - 49^2$ (ii)

$(1.02)^2 - (0.98)^2$ (iii) $153^2 - 147^2$ (iv) $12.1^2 - 7.9^2$

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EXERCISE 9.5 - Question No. 8

Using $(x + a)(x + b) = x^2 + (a + b)x + ab$, find (i) 103×104 (ii)

51×52 (iii) 103×98 (iv) 97×98

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SOLVED EXAMPLES - Question No. 1

Add: $7xy + 5yz - 3zx$, $4yz + 9zx - 4y$, $-3xz + 5x - 2xy$

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SOLVED EXAMPLES - Question No. 2

Subtract $5x^2 - 4y^2 + 6y - 3$ from $7x^2 - 4xy + 8y^2 + 5x - 3y$.

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SOLVED EXAMPLES - Question No. 3

Complete the table for area of a rectangle with given length and breadth.

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SOLVED EXAMPLES - Question No. 4

Find the volume of each rectangular box with given length, breadth and height.

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SOLVED EXAMPLES - Question No. 5

Simplify the expressions and evaluate them as directed: (i)

$$x(x - 3) + 2 \text{ for } x = 1 \text{ (ii) } 3y(2y - 7) - 3(y - 4) - 63 \text{ for } y = 2$$

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SOLVED EXAMPLES - Question No. 6

Add (i) $5m(3 - m)$ and $6m^2 - 13m - 13m$ (ii)

$$4y(3y^2 + 5y - 7) \text{ and } 2(y^3 - 4y^2 + 5)$$

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SOLVED EXAMPLES - Question No. 7

Subtract $3pq(p - q)$ from $2pq(p + q)$

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SOLVED EXAMPLES - Question No. 8

Multiply (i) $(x - 4)$ and $(2x + 3)$ (ii) $(x - y)$ and $(3x + 5y)$

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SOLVED EXAMPLES - Question No. 9

Multiply (i) $(a + 7)$ and $(b - 5)$ (ii) $(a^2 + 2b^2)$ and $(5a - 3b)$

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SOLVED EXAMPLES - Question No. 10

Simplify $(a + b)(2a - 3b + c) - (2a - 3b)c$.

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SOLVED EXAMPLES - Question No. 11

Using the Identity (I), find (i) $(2x + 3y)^2$ (ii) 103^2

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SOLVED EXAMPLES - Question No. 12

Using Identity find (i) $(4p - 3q)^2$ (ii) $(49)^2$

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SOLVED EXAMPLES - Question No. 13

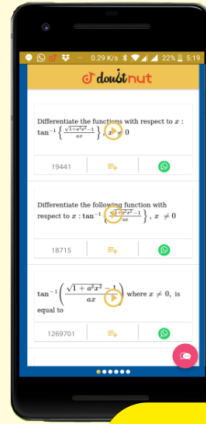
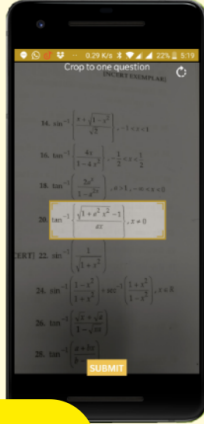
Using Identity find (i) $\left(\frac{3}{2}(m) + \frac{2}{3}(n)\right)\left(\frac{3}{2}(m) - \frac{2}{3}(n)\right)$ (ii)

$983^2 - 17^2$ (iii) 194×206

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