



# Algebra: Operations with Polynomials

Name \_\_\_\_\_ Date \_\_\_\_\_

Perform the required operations with the given polynomials

(1) Given the polynomials

$$A(h) = 3h + 4$$

$$B(h) = -h + 5$$

$$C(h) = 3h^3 + h^2 + h - 1$$

$$D(h) = h^4 - 2h^3 - 2h - 4$$

Find: a)  $C(h) - A(h) \cdot B(h)$ .

b)  $C(h) \cdot B(h) - A(h) \cdot D(h)$

(2) Given the polynomials

$$A(v) = -3v^2 + 2v - 2$$

$$B(v) = 5v^2 + 5v + 2$$

$$C(v) = -5v^3 - 2v^2 - 4v$$

$$D(v) = -3v^4 + 2v^3 + 4v^2 - 5v + 2$$

Find: a)  $C(v) - A(v) \cdot B(v)$ .

b)  $C(v) \cdot B(v) - A(v) \cdot D(v)$

(3) Given the polynomials

$$A(n) = -3n + 1$$

$$B(n) = 4n + 1$$

$$C(n) = 5n^4 - 2n^3 + n^2 + 2n - 1$$

$$D(n) = -4n^3 - 5n^2 + n + 2$$

Find: a)  $C(n) - A(n) \cdot B(n)$ .

b)  $C(n) \cdot B(n) - A(n) \cdot D(n)$



## Answers

Perform the required operations with the given polynomials

(1) Given the polynomials

$$A(h) = 3h + 4$$

$$B(h) = -h + 5$$

$$C(h) = 3h^3 + h^2 + h - 1$$

$$D(h) = h^4 - 2h^3 - 2h - 4$$

Find: a)  $C(h) - A(h) \cdot B(h)$ .

b)  $C(h) \cdot B(h) - A(h) \cdot D(h)$

a)  $3h^3 + 4h^2 - 10h - 21$

b)  $-3h^5 - h^4 + 22h^3 + 10h^2 + 26h + 11$

(2) Given the polynomials

$$A(v) = -3v^2 + 2v - 2$$

$$B(v) = 5v^2 + 5v + 2$$

$$C(v) = -5v^3 - 2v^2 - 4v$$

$$D(v) = -3v^4 + 2v^3 + 4v^2 - 5v + 2$$

Find: a)  $C(v) - A(v) \cdot B(v)$ .

b)  $C(v) \cdot B(v) - A(v) \cdot D(v)$

a)  $15v^4 + 4v^2 + 2v + 4$

b)  $-9v^6 - 13v^5 - 33v^4 - 59v^3 - 22v + 4$

(3) Given the polynomials

$$A(n) = -3n + 1$$

$$B(n) = 4n + 1$$

$$C(n) = 5n^4 - 2n^3 + n^2 + 2n - 1$$

$$D(n) = -4n^3 - 5n^2 + n + 2$$

Find: a)  $C(n) - A(n) \cdot B(n)$ .

b)  $C(n) \cdot B(n) - A(n) \cdot D(n)$

a)  $5n^4 - 2n^3 + 13n^2 + n - 2$

b)  $20n^5 - 15n^4 - 9n^3 + 17n^2 + 3n - 3$