

# Adding and Subtracting Polynomials



## Overview of problems



Example Set: A

Use the **horizontal method** to add the polynomials

$$(4x + 1) + (3x^2 - x + 6)$$

$$(-8y^2 - 3y - 5) + (2y^2 + 4)$$

$$(7z^3 + z^2 - 4z + 3) + (-6z^2 - z + 1)$$

$$(10a^2b^3 + a^2b^2 - 4a) + (9a^2b^2 + 13ab^4)$$



## Example Set: B

Use the **vertical method** to add the polynomials

$$(3x + 3) + (x - 5)$$

$$(c^2 - 10c + 9) + (-8c^2 + 6c - 12)$$

$$(4t^5 - t^2 + 6) + (2t^4 - t^2 - 9)$$

$$(3mn^2 - 6m^2n + 10m^2n^2) + (-2m^2n - mn^2 + 4)$$



## Example Set: C

Use the **horizontal method** to subtract the polynomials

$$(4x + 1) - (3x^2 - x + 6)$$

$$(-8y^2 - 3y - 5) - (2y^2 + 4)$$

$$(7z^3 + z^2 - 4z + 3) - (-6z^2 - z + 1)$$

$$(10a^2b^3 + a^2b^2 - 4a) - (9a^2b^2 + 13ab^4)$$



## Example Set: D

Use the **vertical method** to subtract the polynomials

$$(3x + 3) - (x - 5)$$

$$(c^2 - 10c + 9) - (-8c^2 + 6c - 12)$$

$$(4t^5 - t^2 + 6) - (2t^4 - t^2 - 9)$$

$$(3mn^2 - 6m^2n + 10m^2n^2) - (-2m^2n - mn^2 + 4)$$



Example Set: E

*Perform the indicated operation*

$$(10z^2 - 4) - (3z^2 + 1)$$

$$2(4x - 1) + 3(x + 7)$$

$$-(x^2 + 3x - 4) + 5(2x^2 - 1)$$

$$4(-3y^2 - 2y + 2) - 2(y^2 + 7y + 1)$$

# Adding and Subtracting Polynomials



## Overview of problems- KEY



Example Set: A

Use the **horizontal method** to add the polynomials

$$(4x + 1) + (3x^2 - x + 6)$$
$$3x^2 + 3x + 7$$

$$(-8y^2 - 3y - 5) + (2y^2 + 4)$$
$$-6y^2 - 3y - 1$$

$$(7z^3 + z^2 - 4z + 3) + (-6z^2 - z + 1)$$
$$7z^3 - 5z^2 - 5z + 4$$

$$(10a^2b^3 + a^2b^2 - 4a) + (9a^2b^2 + 13ab^4)$$
$$10a^2b^3 + 10a^2b^2 - 4a + 13ab^4$$



## Example Set: B

Use the **vertical method** to add the polynomials

$$(3x + 3) + (x - 5)$$

$$4x - 2$$

$$(c^2 - 10c + 9) + (-8c^2 + 6c - 12)$$

$$-7c^2 - 4c - 3$$

$$(4t^5 - t^2 + 6) + (2t^4 - t^2 - 9)$$

$$4t^5 + 2t^4 - 2t^2 - 3$$

$$(3mn^2 - 6m^2n + 10m^2n^2) + (-2m^2n - mn^2 + 4)$$

$$2mn^2 - 8m^2n + 10m^2n^2 + 4$$



## Example Set: C

Use the **horizontal method** to subtract the polynomials

$$(4x + 1) - (3x^2 - x + 6)$$
$$-3x^2 + 5x - 5$$

$$(-8y^2 - 3y - 5) - (2y^2 + 4)$$
$$-10y^2 - 3y - 9$$

$$(7z^3 + z^2 - 4z + 3) - (-6z^2 - z + 1)$$
$$7z^3 + 7z^2 - 3z + 2$$

$$(10a^2b^3 + a^2b^2 - 4a) - (9a^2b^2 + 13ab^4)$$
$$10a^2b^3 - 8a^2b^2 - 4a - 13ab^4$$



## Example Set: D

Use the **vertical method** to subtract the polynomials

$$(3x + 3) - (x - 5)$$

$$2x + 8$$

$$(c^2 - 10c + 9) - (-8c^2 + 6c - 12)$$

$$9c^2 - 16c + 21$$

$$(4t^5 - t^2 + 6) - (2t^4 - t^2 - 9)$$

$$4t^5 - 2t^4 + 15$$

$$(3mn^2 - 6m^2n + 10m^2n^2) - (-2m^2n - mn^2 + 4)$$

$$4mn^2 - 4m^2n + 10m^2n^2 - 4$$



Example Set: E

Perform the indicated operation

$$(10z^2 - 4) - (3z^2 + 1)$$

$$7z^2 - 5$$

$$2(4x - 1) + 3(x + 7)$$

$$11x + 19$$

$$-(x^2 + 3x - 4) + 5(2x^2 - 1)$$

$$9x^2 - 3x - 1$$

$$4(-3y^2 - 2y + 2) - 2(y^2 + 7y + 1)$$

$$-14y^2 - 22y + 6$$