MATHEMATICS · GRADES 7-9

# Subtracting polynomials

### Difficulty level: Intermediate

### Mathematics: Grades 7-9

This document was made by AI and there may be mistakes. If a question or answer looks wrong, use the Flag a mistake button to let Brett know so he can fix it.

## *Overview of the concept*

This is how you take one whole expression away from another, like subtracting the cost of materials from the price of a finished project to find the profit, without losing track of the signs. Subtracting a whole expression means subtracting every part of it, not just the first part, and the signs inside it all flip. Missing one flip changes the answer completely, so keeping track of every sign is the real skill here. That is how you work out a profit, a difference in costs, or what is left after taking a whole bundle away.



## *Rule*

**Subtracting polynomials: to subtract a whole polynomial, flip the sign of every term in it, then combine like terms.**

The minus sign reaches every term inside the brackets, not just the first one.

© 2026 Brett Robbins. All Rights Reserved.

## Worked examples

EXAMPLE 1

### Q Find the difference: $(5x^2 + 3x - 2) - (2x^2 - x + 4)$.

**SOLUTION**

This is a subtraction of two polynomials, and the one rule to remember is: the minus sign in front of the second bracket flips the sign of every term inside it, not just the first one. That is the mistake most people make here.

Flipping every sign in the second bracket gives $5x^2 + 3x - 2 - 2x^2 + x - 4$.

Now combine like terms: $5x^2 - 2x^2 = 3x^2$, $3x + x = 4x$, and $-2 - 4 = -6$, so the difference is $3x^2 + 4x - 6$.

EXAMPLE 2

### Q Subtract $(3a - 5)$ from $(7a + 2)$.

**SOLUTION**

This is the same question type with the order spelled out in words, so read it carefully: subtract A from B means B − A, with B first.

That gives $(7a + 2) - (3a - 5)$, and flipping the signs in the second bracket gives $7a + 2 - 3a + 5$.

Combine like terms: $7a - 3a = 4a$ and $2 + 5 = 7$, so the answer is $4a + 7$.

© 2026 Brett Robbins. All Rights Reserved.

## Practice questions

**1** Find the difference: $(4x + 7) - (2x + 3)$.

- **A** 2x + 10
- **B** 2x + 4
- **C** 6x + 4
- **D** 2x - 4

Understand It with Pulse | Flag a mistake

**2** Find the difference: $(6y^2 - 2y + 5) - (3y^2 + y - 1)$.

- **A** $3y^2$ - 3y + 4
- **B** $3y^2$ - y + 6
- **C** $3y^2$ - 3y + 6
- **D** $9y^2$ - 3y + 6

Understand It with Pulse | Flag a mistake

© 2026 Brett Robbins. All Rights Reserved.

**3** Subtract $(x^2 - 4x)$ from $(2x^2 + x)$.

- **A** $x^2 + 5x$
- **B** $x^2 - 3x$
- **C** $3x^2 + 5x$
- **D** $x^2 + 3x$

Understand It with Pulse | Flag a mistake

**4** Find the missing polynomial $(5a^2 + 3a - 1) - (?) = 2a^2 + a + 2$

- **A** $3a^2 + 4a - 3$
- **B** $3a^2 + 2a - 3$
- **C** $7a^2 + 2a - 3$
- **D** $3a^2 + 2a + 1$

Understand It with Pulse | Flag a mistake

© 2026 Brett Robbins. All Rights Reserved.

**5** **Lee writes $(4m - 3) - (m + 5) = 3m + 2$. What did Lee do wrong, and what is the correct answer?**

- **A** The +5 should become -5; the answer is 3m - 8
- **B** The -3 should become +3; the answer is 3m + 2
- **C** The +5 should become -5; the answer is 3m + 8
- **D** The m should become -m; the answer is 3m - 8

Understand It with Pulse | Flag a mistake

**6** **Find the difference: $(3p^2 + 2pq - q^2) - (p^2 - pq + 2q^2)$.**

- **A** $2p^2 + pq - 3q^2$
- **B** $4p^2 + 3pq - 3q^2$
- **C** $2p^2 + 3pq - 3q^2$
- **D** $2p^2 + 3pq + q^2$

Understand It with Pulse | Flag a mistake

© 2026 Brett Robbins. All Rights Reserved.

**7** Find the difference: $(-2x^2 + 5x - 3) - (-x^2 - 2x + 1)$.

- **A** $-x^2 + 7x - 4$
- **B** $-x^2 + 3x - 4$
- **C** $-3x^2 + 7x - 4$
- **D** $-x^2 + 7x - 2$

Understand It with Pulse | Flag a mistake

**8** A board of length $(5x + 8)$ cm has a piece of length $(2x - 3)$ cm cut off it. How long is the piece that is left?

- **A** $3x + 5$
- **B** $7x + 11$
- **C** $3x - 11$
- **D** $3x + 11$

Understand It with Pulse | Flag a mistake

© 2026 Brett Robbins. All Rights Reserved.

**9** **Which of these is $(7n^2 - 4n + 6) - (2n^2 + 3n - 2)$?**

- **A** $5n^2 - 7n + 8$
- **B** $5n^2 - n + 4$
- **C** $9n^2 - 7n + 8$

Understand It with Pulse | Flag a mistake

**10** **Simplify: $(4t^3 - t + 6) - (t^3 - 3t + 2)$.**

- **A** $3t^3 - 4t + 4$
- **B** $3t^3 + 2t + 4$
- **C** $5t^3 + 2t + 4$
- **D** $3t^3 + 2t + 8$

Understand It with Pulse | Flag a mistake

© 2026 Brett Robbins. All Rights Reserved.

## ANSWER KEY

**1.** $2x + 4$

**2.** $3y^2 - 3y + 6$

**3.** $x^2 + 5x$

**4.** $3a^2 + 2a - 3$

**5.** The +5 should become -5; the answer is $3m - 8$

**6.** $2p^2 + 3pq - 3q^2$

**7.** $-x^2 + 7x - 4$

**8.** $3x + 11$

**9.** $5n^2 – 7n + 8$

**10.** $3t^3 + 2t + 4$

© 2026 Brett Robbins. All Rights Reserved.