



Combining Like Terms

KEY IDEA

Like terms have exactly the same variable raised to exactly the same power. $5x$ and $-2x$ are like terms; $5x$ and $5y$ are not, and $5x$ and $5x^2$ are not. To combine like terms, add their coefficients and keep the variable part unchanged. Constants are like terms with each other.

How to do it

1. Identify each term along with the sign in front of it — the sign belongs to the term.
2. Group the terms that share the same variable and power.
3. Add the coefficients of each group. The variable part does not change.
4. Write the simplified expression, usually with variables first and the constant last.

Worked examples

Example 1. $9x + 7y + 1 + 9x + y + 9$

$$18x + 8y + 10$$

Example 2. $-8x - 5y + 5 + 9x + 4y - 9$

$$x - y - 4$$

Example 3. $-6x - 3y - 8 - 3x + y + 2$

$$-9x - 2y - 6$$

Example 4. $7x + 2y + 2 + 3x + y + 4$

$$10x + 3y + 6$$





Combining Like Terms

Directions: Simplify each expression by combining like terms.

1. $-8x + 2y - 7 - 8x + 4y - 5$	2. $-2x - 7y - 9 + 5x - 4y - 3$	3. $5x + 7y - 7 - x + 7y - 5$
4. $x + 2y + 1 + 2x + y + 5$	5. $4x - 2y + 7 - 5x - 7y + 4$	6. $3x + y - 5 + 9x - 2y - 6$
7. $-7x - 5y - 1 - x - 4y - 5$	8. $-8x - 4y + 1 - 6x + 3y + 6$	9. $-6x - 5y - 2 + 7x + 3y - 1$
10. $7x - 4y - 6 - 4x + 5y + 5$	11. $-x + 4y + 5 + 4x + 5y + 9$	12. $-2x - 3y - 6 - 5x - 5y - 7$
13. $-8x + 5y - 5 - 4x - 7y + 9$	14. $-9x - 4y + 7 - 2x - 7y - 4$	15. $-x + 2y - 6 + 8x - 5y - 6$
16. $3x + 6y + 9 + 3x + 7y + 3$	17. $8x + 4y + 2 - 4x + 6y + 2$	18. $-8x - 7y - 2 + 6x + 3y + 4$
19. $6x - 6y - 2 + 9x + 3y - 6$	20. $3x - 2y - 9 - 2x + 7y + 2$	21. $2x - 4y - 1 + 6x - 7y + 6$
22. $4x + 5y + 1 - 8x + 3y + 5$	23. $-2x - 7y - 7 - x - y + 8$	24. $-7x - 6y - 3 - 5x + 5y + 7$

