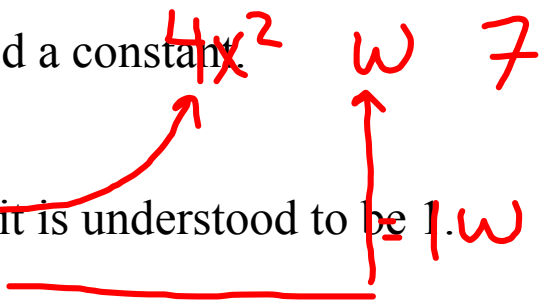
Adding and Subtracting Algebraic Expressions (page 74)

Term: An algebraic expression written with numbers, variables, or both AI
using multiplication, division, or both.
A term with no variables is called a constant.



Coefficient: The numerical part of the term.
If no coefficient is written, then it is understood to be 1.

Monomial: An algebraic expression of exactly one term.
Examples: 7, a, 2x2

Like Terms: Terms that contain the *same variables* with corresponding variables having the *same exponents*.
Examples: 7x3y2 and x3y2 are like terms
5 and 100 are like terms
NOT LIKE TERMS: Y and X
n and n3

Since algebraic expressions themselves represent numbers, they can be added, subtracted, multiplied, and divided.
When algebraic expressions are added or subtracted, they can be combin ONLY if they have like terms.

To Add or Subtract Monomials with Like Terms

- Use the distributive property and the rules of signed numbers to add or subtract the coefficients of each term.
- Write the sum with the variable part from the two terms.

1) Add -2x3 and 5x3

$$\begin{array}{r} -2x^3 \\ 5x^3 \\ \hline 3x^3 \end{array}$$

2) Subtract 7mn2 from 4mn2

↳ change to addition of opposites

$$4mn^2 + -7mn^2$$
$$= -3mn^2$$

3) Add $-3x2+4y$ and $5x3-6x2-3y$

$$\begin{array}{r} 5x^3-6x^2-3y \\ -3x^2+4y \\ \hline 5x^3-9x^2+y \end{array}$$

$5x^3-9x^2+y$

Standard Form: Write your answers in descending order.

$4x^3+3x^2-x+1$

4) Subtract 9x2 - 5x from -4x2 - 8x

$$-4x^2 - 8x + \ominus 9x^2 \oplus 5x$$

$$-13x^2 - 3x$$

* Change subtraction to addition!

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1) Simplify (7x +6x) - 12x

$$13x - 12x = x$$

2) Simplify m - [2 - (2 - m)]

subtraction!! Let's reverse the signs.

$$m - [2 + -2 + m]$$

$$m - (+m)$$

$$= 0$$

cesar

3) Find the sum of -3x2-4xy + 2y2 and -x2+ 5xy - 8y2

$$\begin{array}{r} -3x^2-4xy+2y^2 \\ +\quad -x^2+5xy-8y^2 \\ \hline -4x^2+xy-6y^2 \end{array}$$

4) What is the result when -4x + 6 is subtracted from 8x + 6?

$$(8x+6) - (-4x+6)$$

$$= 12x$$

5) Simplify 5x - 3y - 7x + y

$$-2x-2y$$

⑥ What is the result when $10x-7$ is subtracted from $9x-15$?

$(9x-15)+(-10x+7)$

$-x-8$

⑦ What is the result when $3-2x$ is subtracted from the sum of $x+3$ and $5-x$?