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# Combining Rational Number Like Terms

$$\frac{2}{3}h + \frac{1}{4} - \frac{1}{9}h + \frac{1}{4}$$
$$\frac{6}{9}h - \frac{1}{9}h + \frac{1}{4} + \frac{1}{4}$$
$$\frac{5}{9}h + \frac{2}{4}$$

Commutative Property  
Multiplicative Identity

Combine Like Terms

- 1 State how to combine like terms with integers.
  - 2 Describe how to combine like terms, and simplify the expression  $\frac{2}{3}h + \frac{1}{4} - \frac{1}{9}h + \frac{1}{4}$
  - 3 Explain the mathematical terms.
  - 4 Give the steps for combining like terms.
  - 5 Calculate the total amount of ingredients by combining like terms.
  - 6 Combine and simplify the given rational expressions as much as possible.
- + with lots of tips, answer keys, and detailed answer explanations for all of the problems.



The complete package, including all problems, hints, answers, and detailed answer explanations is available for all [sofatutor.com](https://www.sofatutor.com) subscribers.



## State how to combine like terms with integers.

Choose the correct statements.

$$2x - 7y + 13x + 9y$$

- A** The like terms are  $2x$  and  $13x$  as well as  $-7y$  and  $2x$ .
- B** Using the commutative property you can reorder the expression as  $2x + 13x - 7y + 9y$ .
- C** Combining like terms leads to
- $2x + 13x = 15x^2$
  - $-7y + 9y = -2y$
- D** Combining like terms leads to
- $2x + 13x = 15x$
  - $-7y + 9y = 2y$
- E** Thus you can simplify the expression above to  $15x + 2y$ .



## Hints for solving these problems

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of 6

### State how to combine like terms with integers.

#### Hint #1

The commutative property of addition is given by  $a + b = b + a$ .

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#### Hint #2

Just look at the following examples for like terms:

- $4x$  and  $-3x$  are like terms.
  - $4x$  and  $4y$  aren't like terms at all.
  - $3y$  and  $-4y$  are like terms.
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## Answers and detailed answer explanations for these problems

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### State how to combine like terms with integers.

**Answer key:** B, D, E

$$2x - 7y + 13x + 9y$$

To simplify this expression we first find the like terms and reorder the expression using the commutative property.

So the  $x$ -terms as well as the  $y$ -terms are grouped together:  
 $2x + 13x - 7y + 9y$ .

Now we can combine the like terms:

- $2x + 13x = 15x$
- $-7y + 9y = 2y$

This gives us the simplified expression  $15x + 2y$ .