

Math 7H - Unit 2a

Day 2 -Adding & Subtracting Linear Expressions

Lesson Objectives:

- I can combine like terms in expressions.
- I can apply properties of operations as strategies to add and subtract linear expressions with rational coefficients.

As a review, how do we model the following integers with algebra tiles?

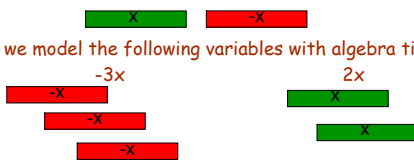


We can add, subtract, multiply, and divide integers. (Meaning that we can model these operations with algebra tiles, too.)

What happens when I pair a positive unit with a negative unit? This is called a zero pair.

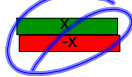


How do we model the following variables with algebra tiles?

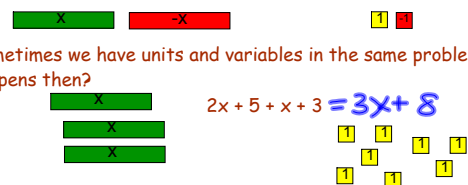


We can add, subtract, multiply, and divide variables. (Meaning that we can model these operations with algebra tiles, too.)

What happens when I pair a positive variable with a negative variable?



Sometimes we have units and variables in the same problem. What happens then?



We can only add the same shapes together. This is called combining like terms.

An algebraic expression is in simplest form when it has no like terms and no parentheses.

Model each expression with algebra tiles. Then write it in simplest form.

1. $2x + 8x = 10x$

2. $6x + 3 + 2x = 8x + 3$

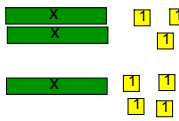
3. $3x - 5x - 8x + 6 = -10x + 6$

Definition	Facts/Characteristics
an algebraic expression in which the variable is raised to the first power	contains one variable can contain #s, operation exponents are no higher than 1
Examples	Non-examples
$4x+6$ $7x \cdot 3$ $3x-2$ $5x+2-2x+10$	$3x^2+2$ $3x^2+4x-9$ $a+b$ xy y^3

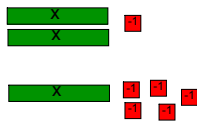
We can add linear expressions with or without models.

Model each expression. Then simplify.

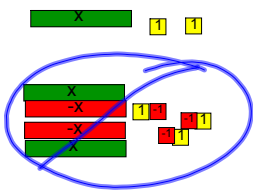
4. $(2x + 3) + (x + 4) = 3x + 7$



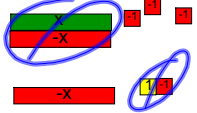
5. $(2x + 1) + (x + 5) = 3x + 6$



6. $(3x + 5) + (-2x - 3) = x + 2$

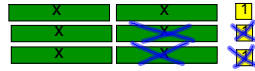


7. $(x - 4) + (-2x + 1) = -x - 3$

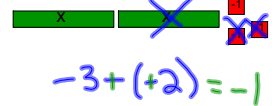


Model each expression. Then simplify.

8. $(6x + 3) - (2x + 2) = 4x + 1$

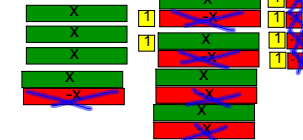


9. $(2x - 3) + (x + 2) = x - 1$



$2 + (-4) = -2$
 $3x + (-5x) = -2x$

10. $(3x + 2) + (-5x + 4) = -2x + 6$



11. $(4x + 4) + (-2x + 1) = 2x + 5$



When subtracting integers, add the opposite, or the additive inverse. The same process is used when subtracting linear expressions.

We can simplify linear expressions with rational exponents.

12. $(0.5x + 15) + (8.2x - 16.6)$

13. $\left(\frac{1}{5}x + 6\right) - \left(\frac{1}{6}x - 2\right)$

Homework

Adding & Subtracting Linear Expressions WKS

* Individual Think Time *



What to do if you get stuck...

1. Reread the problem. Did you write it down correctly?
2. Reread your notes. Is there a problem similar that we did together in class?
3. Find a problem similar in your book. Try this one to see if it helps.
4. Skip the problem until the end of Individual Think Time. Then ask an "educated" question of a neighbor or Mrs. Call.

Today we're working by...

