LESSON MAKER PRO

Expression Remix

Rewrite expressions without changing their value.

GRADE 7 · 7.A.4.1

7.A.4.1 "Use properties of operations (associative, commutative, and distributive) to generate equivalent numerical and algebraic expressions containing rational numbers, grouping symbols, and whole-number exponents."

NAME _____ DATE _____

KEEP THE VALUE

The distributive property lets you multiply each term inside parentheses by the number outside. You can also change the order or grouping of terms to bring like terms together. When a term contains x^2, multiply its coefficient and keep the exponent on x.

WORKED EXAMPLE

Rewrite 7/11(22x + 33) without parentheses.

1. Multiply each term inside the parentheses by 7/11: (7/11)(22x) + (7/11)(33).
2. Simplify each product: 14x + 21.

Answer: 14x + 21

PRACTICE 6 problems

1 Rewrite 1/2(8x + 6) without parentheses.

ANSWER _____

2 Rewrite -3/4(12x - 8) without parentheses.

ANSWER _____

3 Rewrite 2/3($9x^2$ + 15) without parentheses.

ANSWER _____

4 Write 5/6(18 + 24) as a sum of two products, then find its value.

ANSWER _____

_____

5 Use properties of operations to combine like terms: 3/5x + 1/4 + 2/5x.

ANSWER _____

6 Simplify 4(1/8x + 3/8) + 1/2x.

ANSWER _____

APPLY IT Show your work

1 For a trading card event, a club buys 8 sets. Each set has a card that costs $3/4 and a sleeve that costs $1/2. Write the total cost as a sum of two products, then find the cost.

WORK SPACE

ANSWER _____

2 A video creator plans to spend 9x + 12 minutes editing x clips and an intro. A new tool cuts the editing time to 2/3 of that plan. Write an expression for the new editing time without parentheses. Then find the time for 3 clips.

WORK SPACE

ANSWER _____

CHALLENGE One step up

Simplify $-2/3(9x^2 - 6x + 3) + 1/2(4x^2 + 8x - 8)$. Show how you combine like terms.

WORK SPACE AND ANSWER

ANSWER KEY

Expression Remix

GRADE 7 · 7.A.4.1

PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	Rewrite 1/2(8x + 6) without parentheses.	**4x + 3**
2	Rewrite -3/4(12x - 8) without parentheses.	**-9x + 6**
3	Rewrite 2/3($9x^2$ + 15) without parentheses.	**$6x^2$ + 10**
4	Write 5/6(18 + 24) as a sum of two products, then find its value.	**(5/6)(18) + (5/6)(24) = 35**
5	Use properties of operations to combine like terms: 3/5x + 1/4 + 2/5x.	**x + 1/4**
6	Simplify 4(1/8x + 3/8) + 1/2x.	**x + 3/2**

PART 2 · APPLY IT

1. **8(3/4) + 8(1/2) = $10** Distribute the 8 to the cost of each item. The cards cost $6 and the sleeves cost $4.
2. **6x + 8 minutes; 26 minutes for 3 clips** Distribute 2/3 to get 6x + 8. Substitute 3 for x to get 18 + 8 = 26.

CHALLENGE

$-6x^2 + 4x - 2 + 2x^2 + 4x - 4 = -4x^2 + 8x - 6$

Accept equivalent simplified forms and any correct order of terms. For the two-part questions, check both the rewritten expression and its value.