LESSON MAKER PRO

Expression Remix

Combine rational-coefficient expressions with care.

GRADE 7 · MA.7.AR.1.1

MA.7.AR.1.1 "Apply properties of operations to add and subtract linear expressions with rational coefficients."

NAME _____ DATE _____

COMBINE LIKE TERMS

Use the distributive property to remove parentheses. When you subtract a group, change the sign of every term in that group. Then combine x terms with x terms and constants with constants.

WORKED EXAMPLE

Simplify: (23/29x - 31/37) + (41/29x + 47/37)

1. Group the x terms and the constants: (23/29x + 41/29x) + (-31/37 + 47/37).
2. Add the x coefficients: 23/29x + 41/29x = 64/29x.
3. Add the constants: -31/37 + 47/37 = 16/37.

Answer: 64/29x + 16/37

PRACTICE 6 problems

1 Simplify: (3/8x + 5/9) + (1/6x - 1/4)

ANSWER _____

2 Simplify: (9/14x - 4/15) - (3/14x + 5/12)

ANSWER _____

3 Simplify: -4/9x + 3/10 + (5/9x - 1/6)

ANSWER _____

4 Simplify: (8/15x - 3/8) - (-1/15x + 5/6)

ANSWER _____

5 Simplify: 1.6x - 0.45 + 0.8x + 1.25

ANSWER _____

6 Simplify: (-5/12x + 7/10) - (3/8x - 1/5)

ANSWER _____

APPLY IT Show your work

1 In a game tournament, a player's score bonus after x completed quests is modeled by (3/5x + 7/10) points. The game then subtracts an adjustment of (1/4x - 1/5) points. Write a simplified expression for the player's final bonus.

WORK SPACE

ANSWER _____

2 A music club collects (5/6x + 3/8) dollars from ticket sales and pays (1/3x + 1/4) dollars for equipment. Write a simplified expression for the money left after paying for the equipment.

WORK SPACE

ANSWER _____

CHALLENGE One step up

Simplify: (7/9x - 5/12) - [(-2/3x + 1/8) - (1/6x - 3/4)]

WORK SPACE AND ANSWER

ANSWER KEY

Expression Remix

GRADE 7 · MA.7.AR.1.1

PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	Simplify: (3/8x + 5/9) + (1/6x - 1/4)	**13/24x + 11/36**
2	Simplify: (9/14x - 4/15) - (3/14x + 5/12)	**3/7x - 41/60**
3	Simplify: -4/9x + 3/10 + (5/9x - 1/6)	**1/9x + 2/15**
4	Simplify: (8/15x - 3/8) - (-1/15x + 5/6)	**3/5x - 29/24**
5	Simplify: 1.6x - 0.45 + 0.8x + 1.25	**2.4x + 0.8**
6	Simplify: (-5/12x + 7/10) - (3/8x - 1/5)	**-19/24x + 9/10**

PART 2 · APPLY IT

1. **7/20x + 9/10** Subtract the second expression by changing the signs inside its parentheses. Combine 3/5x and -1/4x, then combine 7/10 and 1/5.
2. **1/2x + 1/8** Subtract the equipment cost expression from the ticket-sales expression. Combine the x terms and then combine the constants.

CHALLENGE

29/18x - 31/24

Accept equivalent expressions with terms in a different order. For subtraction problems, check that students changed the sign of every term in the expression being subtracted.