

Expression Remix

Distribute, combine, and simplify.

GRADE 8 • MA.8.AR.1

MA.8.AR.1 "Generate equivalent algebraic expressions."

NAME _____

DATE _____

BUILD EQUIVALENT EXPRESSIONS

Use the distributive property to multiply the factor outside parentheses by every term inside. Then combine like terms, such as x-terms with x-terms and constants with constants. Equivalent expressions have the same value for every value of x.

WORKED EXAMPLE

Rewrite $7(x + 5) - 3x$ as an equivalent expression.

1. Distribute 7: $7x + 35 - 3x$

2. Combine the x-terms: $4x + 35$

Answer: $4x + 35$

PRACTICE 6 problems

1 Rewrite $8(x + 2) + x$ as an equivalent expression.

ANSWER _____

2 Rewrite $10x - 2(x + 8)$ as an equivalent expression.

ANSWER _____

3 Rewrite $6(x - 2) + 10$ as an equivalent expression.

ANSWER _____

4 Rewrite $11 + 2(9x - 1)$ as an equivalent expression.

ANSWER _____

5 Rewrite $11x + 6 - 2x + 8$ as an equivalent expression.

ANSWER _____

6 Rewrite $9(2x + 1) - 8x$ as an equivalent expression.

ANSWER _____

APPLY IT Show your work

- 1** At a gaming tournament, a team pays \$2 for each of n player passes and a \$12 team fee. The organizer writes $2(n + 6)$ for the total cost. Write an equivalent expression without parentheses.

WORK SPACE

ANSWER _____

- 2** An online art shop lists each of x poster prints at \$11. A coupon subtracts \$2 from each print, and shipping adds \$10 to the order. Write and simplify an expression for the total cost.

WORK SPACE

ANSWER _____

CHALLENGE One step up

CHALLENGE

Rewrite $2(6x - 8) - 9(x + 1) + 12x$ as an equivalent expression.

PART 1 • PRACTICE

#	PROBLEM	ANSWER
1	Rewrite $8(x + 2) + x$ as an equivalent expression.	$9x + 16$
2	Rewrite $10x - 2(x + 8)$ as an equivalent expression.	$8x - 16$
3	Rewrite $6(x - 2) + 10$ as an equivalent expression.	$6x - 2$
4	Rewrite $11 + 2(9x - 1)$ as an equivalent expression.	$18x + 9$
5	Rewrite $11x + 6 - 2x + 8$ as an equivalent expression.	$9x + 14$
6	Rewrite $9(2x + 1) - 8x$ as an equivalent expression.	$10x + 9$

PART 2 • APPLY IT

1. **$2n + 12$** Distribute 2 to both terms inside the parentheses. The result is $2n + 12$.
2. **$9x + 10$** The expression is $11x - 2x + 10$. Combine the x-terms to get $9x + 10$.

CHALLENGE

 $15x - 25$

Accept equivalent expressions with terms in a different order, such as $16 + 9x$. For items that ask students to simplify, expect parentheses to be removed and like terms combined.