LESSON MAKER PRO

Expression Power Moves

Expand, combine, and explain what expressions mean.

GRADE 7 · 7.PAR.2

7.PAR.2 "Use properties of operations, generate equivalent expressions and interpret the expressions to explain relevant contextual situations."

NAME _____ DATE _____

MAKE EQUIVALENT EXPRESSIONS

Use the distributive property to multiply a factor by every term inside parentheses. Then combine like terms, which have the same variable part. Equivalent expressions have the same value for every value of x.

WORKED EXAMPLE

Simplify 13(x + 4).

1. Distribute 13: 13x + 13(4)
2. Multiply: 13x + 52

Answer: 13x + 52

PRACTICE 6 problems

1 Simplify 8(x + 6).

ANSWER _____

2 Simplify 11x + 9x - 7.

ANSWER _____

3 Write an equivalent expression for 7(6x + 8).

ANSWER _____

4 Simplify 15 + 10(x - 1).

ANSWER _____

5 Which expression is equivalent to 9(x + 7)? Choose one: 9x + 63, 16x, 9x + 7.

ANSWER _____

6 A game store describes a total cost with 18 + 6x, where x is the number of add-on packs. What does 18 + 6x represent?

ANSWER _____

APPLY IT Show your work

1 For a fundraiser, a student sells 16 snack bags. Each bag holds x granola bars and 7 fruit snacks. Write an equivalent expression for the total number of snacks. Explain what each term in your expression represents.

WORK SPACE

ANSWER _____

2 At a dance club event, 9 groups pay 11 dollars per group for entry and 8 dollars per member. Each group has x members. Write and simplify an expression for the total amount paid. Explain what each term represents.

WORK SPACE

ANSWER _____

CHALLENGE One step up

Simplify 6(7x + 9) - 8(x - 6). Then explain why the constant is 102 rather than 6.

WORK SPACE AND ANSWER

ANSWER KEY

Expression Power Moves

GRADE 7 · 7.PAR.2

PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	Simplify 8(x + 6).	**8x + 48**
2	Simplify 11x + 9x - 7.	**20x - 7**
3	Write an equivalent expression for 7(6x + 8).	**42x + 56**
4	Simplify 15 + 10(x - 1).	**10x + 5**
5	Which expression is equivalent to 9(x + 7)? Choose one: 9x + 63, 16x, 9x + 7.	**9x + 63**
6	A game store describes a total cost with 18 + 6x, where x is the number of add-on packs. What does 18 + 6x represent?	**The total cost in dollars for x add-on packs, including an 18-dollar base fee.**

PART 2 · APPLY IT

1. **16x + 112** Start with 16(x + 7). Distribute 16 to get 16x + 112.
2. **99 + 72x** Write 9(11 + 8x). Distribute 9 to get 99 + 72x.

CHALLENGE

34x + 102; distributing gives constants 54 and positive 48, and 54 + 48 = 102.

Accept equivalent expressions with terms in a different order. For context answers, accept clear wording that correctly identifies the quantity represented by each term.