

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

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

WORK SPACE

ANSWER _____

- 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

CHALLENGE

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

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

- $16x + 112$; $16x$ is the total number of granola bars, and 112 is the total number of fruit snacks.** Start with $16(x + 7)$. Distribute 16 to get $16x + 112$.
- $99 + 72x$; 99 is the total entry cost for the groups, and $72x$ is the total member cost.** 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.