

Expression Power Moves

Use properties to rewrite expressions without changing their value.

GRADE 6 • NY-6.EE.3

NY-6.EE.3 "Apply the properties of operations to generate equivalent expressions."

NAME _____

DATE _____

KEEP THE VALUE EQUAL

Use the distributive property to multiply the number outside parentheses by every term inside. Then combine like terms, such as x terms with x terms and number terms with number terms.

WORKED EXAMPLE

Rewrite $13(x + 5)$ as an equivalent expression.

1. Multiply 13 by x : $13x$.
2. Multiply 13 by 5: 65.
3. Write the two products as a sum: $13x + 65$.

Answer: $13x + 65$

PRACTICE 6 problems

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

ANSWER _____

- 2** Simplify $6x + 8 + 3x - 2$.

ANSWER _____

- 3** Factor $10x + 30$ using the greatest common factor.

ANSWER _____

- 4** Rewrite $12 + 14x + 18$ by combining like terms.

ANSWER _____

- 5** Rewrite $15(x - 4)$ as an equivalent expression.

ANSWER _____

- 6** Simplify $8(2x + 3) + x$.

ANSWER _____

APPLY IT Show your work

- 1** At a gaming tournament, each of 4 teammates earns x points from rounds and 6 bonus points. Write and simplify an expression for the team's total points.

WORK SPACE

ANSWER _____

- 2** A school club orders 9 custom hoodies. Each hoodie costs x dollars plus a 2-dollar design fee. The club uses a 10-dollar discount. Write and simplify an expression for the total cost.

WORK SPACE

ANSWER _____

CHALLENGE One step up

Simplify $3(4x + 8) + 2(x - 9)$. Then name the property you used to remove the parentheses.

WORK SPACE AND ANSWER

PART 1 • PRACTICE

#	PROBLEM	ANSWER
1	Rewrite $4(x + 9)$ as an equivalent expression.	$4x + 36$
2	Simplify $6x + 8 + 3x - 2$.	$9x + 6$
3	Factor $10x + 30$ using the greatest common factor.	$10(x + 3)$
4	Rewrite $12 + 14x + 18$ by combining like terms.	$14x + 30$
5	Rewrite $15(x - 4)$ as an equivalent expression.	$15x - 60$
6	Simplify $8(2x + 3) + x$.	$17x + 24$

PART 2 • APPLY IT

1. **$4x + 24$** Each teammate earns $x + 6$ points, so the total is $4(x + 6)$. Distribute 4 to get $4x + 24$.
2. **$9x + 8$** The cost before the discount is $9(x + 2)$. Distribute, then subtract 10: $9x + 18 - 10 = 9x + 8$.

CHALLENGE

 $14x + 6$; distributive property

Accept any equivalent expression written in a different order, such as $36 + 4x$ for $4x + 36$. For factoring, accept an equivalent factored form only if it expands to the original expression.