

# Expression Remix

*Use properties and like terms to simplify linear expressions.*

**GRADE 7 • 7.PFA.2.c**

**7.PFA.2.c** "Simplify and generate equivalent algebraic expressions in one variable by applying the order of operations and properties of real numbers. Expressions may require combining like terms to simplify..."

NAME \_\_\_\_\_

DATE \_\_\_\_\_

## BUILD A SIMPLER EXPRESSION

Follow the order of operations first, including parentheses. Use the distributive property when needed, then combine terms with the same variable part and combine constants.

## WORKED EXAMPLE

Simplify:  $(13x + 11) - (12x - 14)$

1. Distribute the subtraction:  $13x + 11 - 12x + 14$
2. Combine x-terms:  $x + 11 + 14$
3. Combine constants:  $x + 25$

**Answer:  $x + 25$**

## PRACTICE 6 problems

**1** Simplify:  $6x + 4x - 9$

ANSWER \_\_\_\_\_

**2** Simplify:  $-6x + 1 - 4x + 7$

ANSWER \_\_\_\_\_

**3** Simplify:  $9 - (x - 6) + 4x$

ANSWER \_\_\_\_\_

**4** Simplify:  $(1/4)x + (7/4)x - 6$

ANSWER \_\_\_\_\_

**5** Simplify:  $-2(x - 4) + 7x$

ANSWER \_\_\_\_\_

**6** Simplify:  $(5/6)x - 1/3 + (1/6)x + 2/3$

ANSWER \_\_\_\_\_

## APPLY IT Show your work

- 1** A player earns  $4x$  coins by completing quests. They spend 7 coins on an item, earn  $3x$  coins in a bonus round, then find 6 coins. Write and simplify an expression for the player's total coin change.

WORK SPACE

ANSWER \_\_\_\_\_

- 2** For a school dance,  $x$  friends each buy a \$6 wristband. The student council spends \$2 per friend on snacks and receives a \$9 donation. Write and simplify an expression for the council's net money.

WORK SPACE

ANSWER \_\_\_\_\_

## CHALLENGE One step up

### CHALLENGE

Simplify:  $-2(3x - 4) + (1/2)(6x + 8) - 5x$

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## PART 1 • PRACTICE

| # | PROBLEM                                 | ANSWER                       |
|---|-----------------------------------------|------------------------------|
| 1 | Simplify: $6x + 4x - 9$                 | <b><math>10x - 9</math></b>  |
| 2 | Simplify: $-6x + 1 - 4x + 7$            | <b><math>-10x + 8</math></b> |
| 3 | Simplify: $9 - (x - 6) + 4x$            | <b><math>3x + 15</math></b>  |
| 4 | Simplify: $(1/4)x + (7/4)x - 6$         | <b><math>2x - 6</math></b>   |
| 5 | Simplify: $-2(x - 4) + 7x$              | <b><math>5x + 8</math></b>   |
| 6 | Simplify: $(5/6)x - 1/3 + (1/6)x + 2/3$ | <b><math>x + 1/3</math></b>  |

## PART 2 • APPLY IT

1.  **$7x - 1$**  Write  $4x - 7 + 3x + 6$ . Combine the x-terms and constants to get  $7x - 1$ .
2.  **$4x + 9$**  Write  $6x - 2x + 9$ . Combine like terms to get  $4x + 9$ .

## CHALLENGE

 **$-8x + 12$** 

Accept equivalent simplified forms with terms in a different order, such as  $-1 + 7x$  for  $7x - 1$ . Students should distribute to every term inside parentheses before combining like terms.