NAME _____ DATE _____ PERIOD _____

# Lesson 3 Skills Practice

## *Adding Linear Expressions*

**Add. Use models if needed.**

1. $(x + 8) + (6x + 3)$

2. $(-2x + 8) + (-4x + 2)$

3. $(7x + 2) + (6x + 12)$

4. $(10x - 4) + (12x + 8)$

5. $(-2x + 1) + (-x + 5)$

6. $(9x - 1) + (-5x - 3)$

7. $(7x + 4) + (3x - 9)$

8. $(-8x + 4) + (-3x + 2)$

9. $(-2x + 3) + (2 + 6x)$

10. $(4x - 7) + (-6x + 18)$

11. $(8x + 1) + (5x + 2)$

12. $(-x + 3) + (-4 - 7x)$

13. $(-5x - 3) + (-4x - 7)$

14. $(2x + 3) + (x + 3)$

15. $(11x + 6) + (-8x + 3)$

16. $(15x - 16) + (20x + 13)$

17. $(12x - 23) + (17 + 4x)$

18. $(-x - 1) + (-5x + 11)$

19. $(-20x + 15) + (14x - 19)$

20. $(4x + 9) + (10x - 5) + (-11x - 2)$

21. $(2x + 1) + (4x - 3) + (x + 4)$

22. $(-x - 5) + (4x - 6) + (-x + 14)$

23. $(9x + 4) + (-3x + 7) + (-2x - 1)$

24. $(5x + 4) + (-7x - 8) + (-2x + 1)$

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# Lesson 3 Homework Practice

## *Adding Linear Expressions*

**Add. Use models if needed.**

1. $(5x + 21) + (10x + 13)$

2. $(-9x + 12) + (-5x + 14)$

3. $(-4x + 6) + (6x - 10)$

4. $(4x + 17) + (15x - 16)$

5. $(-3x - 1) + (-x - 9)$

6. $(2x - 6) + (-7x + 5)$

7. $(-x + 27) + (16x + 4)$

8. $(-16x - 14) + (13x + 26)$

9. $(3 + 12x) + (-8x + 4)$

10. $(5 + 16x) + (18 + 6x)$

11. $(14x + 8) + (-12x + 3)$

12. $(-7x - 6) + (-3x - 5)$

13. $(-25x + 19) + (9x - 6)$

14. $(20x + 19) + (-21x - 14)$

15. $(2x - 8) + (7x - 1) + (-5x + 6)$

16. $(-15x - 3) + (7x - 6) + (-2x + 9)$

17. $(-3x + 10) + (-2x - 11) + (-3x - 12)$

18. $(1 + 4x) + (-5x + 22) + (-8x + 3)$

19. $(6x - 7) + (4x - 2) + (-9x + 3) + (2x + 4)$

20. A company can model the profit it makes on selling an item at price $x$ by using the expression $2000x - 10{,}500$. A second item sold at the same price brings in a profit of $1850x - 11{,}600$. Write and simplify an expression that reflects the total profit from the sale of both items.

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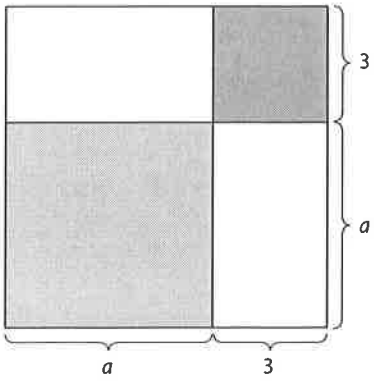
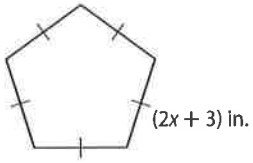
# Lesson 3 Problem-Solving Practice

## *Adding Linear Expressions*

**1.** Write an expression in simplest form to show the perimeter of the large square below.




**2.** Heather was building a scale model of the Pentagon for her history class.

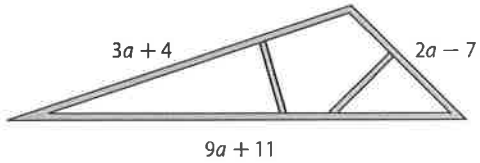



**a.** Write and simplify an expression to represent the perimeter of Heather's scale model.

**b.** Find the perimeter of the model if $x = 2$.

**3.** A mailing supply company produces yellow mailing envelopes. The envelopes come in a variety of sizes, but the length is always 4 centimeters more than double the width. Write and simplify an expression to give the perimeter of any of the envelopes.

**4.** Find the simplest expression for the perimeter of the triangular roof truss.




**5.** Kevin built a deck in his backyard. The length of the deck was $5x + 1$ units and the width of the deck was $4x - 1$ units. Write and simplify an expression to represent the perimeter of Kevin's deck.

**6.** The cost to produce $x$ monitors is represented by the expression $350x + 1500$. The cost to produce $x$ chairs is represented by the expression $175x - 50$. Write and simplify an expression to represent the cost of $x$ monitors and chairs.

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