1.20.16 Class Activity: Simplifying Algebraic Expressions with Models

In using Algebra tiles, every variable is represented by a rectangle, positive or negative and every integer is represented by a square, positive or negative.

Key for Tiles:

1 = 1 x = x

−1 = −1 $-x$ = $-x$

Write an expression for what you see and then write the expression in simplest form.

Example:

−1 −1 −1 −1 −1

1 1 1 1

−5 + 4

−1

Attend to Precision

Example

x / $-x$ / x

1 1 / 1 1

$2x - x + 4$ or

$2x + -x + 4$ or

$x + -x + x + 4$

$x + 4$

1.

$-x$ x

$-x$ x

−1 −1 x

2.

$-x$ x

$-x$ x

$-x$

$-x$

3.

$-x$ −1

$-x$ −1

x

4.

−1 −1

−1

1 1

$-x$

$-x$

x

x

x

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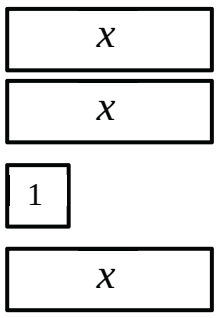
Using algebra tiles, draw two different models or write two different expressions that can be simplified to the following expressions.

5. $x + 6$	6. $-3x + -2$	7. $4x - 1$

How many ways are there to model each of the expressions above? Justify.

Simplify each expression.

8. $2x + 1 + x$ 	9. $3x + 4 + (-2)$	10. $2x + x - 2 + 3$
11. $-3x + 1 + -x$	12. $2x + -3 + -2x$	13. $-x + 3 + 4x$

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14. $-2x + 4 + x - 7$	15. $4x - 3 + 2 - 2x$	16. $-4x - 1 + 3x + 2 - x$
17. $x + x + x + x$	18. $x - x - x - x$	19. $-x - x - x - x$
20. $3 - 2x + x - 5$	21. $4 - 2 - 4x - 2$	22. $2x - x - 3 + 5$

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