Name:_____ Date:_____ HR:____ Notes# 10

Notes 3.1 (Day 2): Algebraic Expressions

Learning Target: Simplify algebraic expressions.

Success Criteria:
- I can identify terms and like terms of algebraic expressions.
- I can combine like terms to simplify algebraic expressions.
- I can write and simplify algebraic expressions to solve real-life problems.

Warm up

What are the like terms in the expressions? Then, simplify the expressions.

$4x + 3y - 8.5x + 5 + 3z - 8$

$(4 - 8.5)x + (5 - 8) + 3y + 3z$

$-4.5x - 3 + 3y + 3z$

$-4y + 3x^2 - 14.3y - 4.5x^2 + 18$

$(-4 - 14.3)y + (3 - 4.5)x^2 + 18$

$-18.3y - 1.5x^2 + 18$

Example 3 — **Modeling Real Life**

EXAMPLE 4

Modeling Real Life

Each person in a group buys an evening ticket, a medium drink, and a large popcorn. How much does the group pay when there are 5 people in the group?

Write an expression that represents the sum of the costs of the items purchased. Use a verbal model.

Verbal Model

# of people · cost of ticket + # people · cost drink + # people · cost pop corn

Identify the Variable

x = # of people

Expression

$7.50 \cdot x + 2.75 \cdot x + 4.00 \cdot x$

$14.25 \cdot x$

$x = 5$

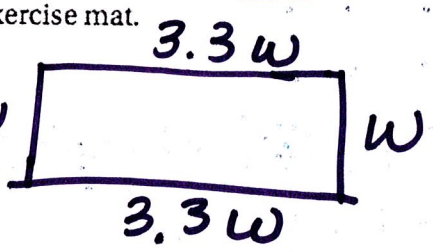
$= 14.25(5)$

$= \$71.25$

Self-Assessment for Problem Solving

Solve each exercise. Then rate your understanding of the success criteria in your journal.

16. **MODELING REAL LIFE** An exercise mat is 3.3 times as long as it is wide. Write expressions in simplest form that represent the perimeter and ~~the area~~ of the exercise mat.



Perimeter

$w + 3.3w + w + 3.3w$

$(1 + 3.3 + 1 + 3.3)w$

$= 8.6w$

17. **DIG DEEPER!** A group of friends visits the movie theater in Example 4. Each person buys a daytime ticket and a small drink. The group shares 2 large popcorns. What is the average cost per person when there are 4 people in the group?

$x = \#\text{people}$

$5 \cdot x + 1.75 \cdot x + \frac{8}{x}$

$x = 4 \quad 5(4) + 1.75(4) + \frac{8}{4}$

$= \$29$

$\$7.25$

$4\overline{)29}$

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