GRADE 7 · UNIT 9 · PRACTICE TEST

Algebraic Expressions

24 points

Name_____
Date_____
Period_____

Show your work for problems that require calculations. Each numbered question or lettered part is worth 1 point.

Adding and subtracting linear expressions *10 points*

1. Find the sum, with the fewest terms: $(6x + 3) + (2x - 8)$ *1 pt*

2. Find the sum, with the fewest terms: $\left(\frac{1}{6}x + 2\right) + \left(\frac{1}{3}x - 5\right)$ *1 pt*

3. Find the difference, with the fewest terms: $(7x + 2) - (3x - 4)$ *1 pt*

4. Use $(2.5x + 1.4)$ and $(0.5x - 0.6)$.

a. Find their sum, with the fewest terms. *1 pt*

b. Find their difference, first minus second, with the fewest terms. *1 pt*

5. What is the result when $\left(\frac{3}{4}x + 3\right)$ is subtracted from $\left(2\frac{1}{2}x - 1\right)$?

a. Write the subtraction expression. *1 pt*

b. Rewrite it with the fewest terms. *1 pt*

6. Rewrite with the fewest terms: $(x + 5) - (0.3x - 2 + 0.2x)$ *1 pt*

7. Use $\left(2\frac{1}{3}x + 4\right)$ and $\left(\frac{1}{3}x + 1\right)$.

a. Write the expression for the first minus the second. *1 pt*

b. Rewrite it with the fewest terms. *1 pt*

Equivalent expressions

14 points

8. Use the distributive property.

a. Which rewrites 8×2.5 as the sum of two products, and its value? *1 pt*

- ○ A. $(8 \times 2) + (8 \times 0.5) = 20$
- ○ B. $(8 \times 2) + 0.5 = 16.5$
- ○ C. $8 \times 2 \times 0.5 = 8$
- ○ D. $(8 \times 2) + (8 \times 5) = 56$

b. Which rewrites 8×1.5 as the difference of two products, and its value? *1 pt*

- ○ A. $(8 \times 2) + (8 \times 0.5) = 20$
- ○ B. $(8 \times 2) - (8 \times 0.5) = 12$
- ○ C. $(8 \times 2) - (8 \times 5) = -24$
- ○ D. $(8 \times 2) - 0.5 = 15.5$

9. Which property says that $2(x + 5) = 2x + 10$? *1 pt*

- ○ A. identity
- ○ B. commutative
- ○ C. associative
- ○ D. distributive

10. Find the value of $-2x + 5$ when $x = -1.5$. *1 pt*

11. Use $2(x + 3) + x$ and $3x + 6$.

a. Find the value of each expression when $x = 1$. *1 pt*

b. Rewrite the first expression with the fewest terms. *1 pt*

c. Are the two expressions equivalent? Explain how you know. *1 pt*

12. Select all the expressions equivalent to $8x - 12$. *1 pt*

- ☐ A. $8(x - 12)$
- ☐ B. $-12 + 8x$
- ☐ C. $12 - 8x$
- ☐ D. $4(2x - 3)$
- ☐ E. $8x - 12 + x$

13. Use $\frac{1}{2}(10x - 4)$.

a. Rewrite it with the fewest terms. *1 pt*

b. Rewrite $-\frac{1}{2}(10x - 4)$ with the fewest terms. *1 pt*

14. Rewrite 2x + (3x + 4) using only the associative property. *1 pt*

15. Is −2(4y − 3) + 9y equivalent to 6 + y? Explain how you know. *1 pt*

16. Use 3(2x + 1) and 6x + 1.

a. Rewrite 3(2x + 1) with the fewest terms. *1 pt*

b. Are the two expressions equivalent? Explain how you know. *1 pt*