

Rewriting Linear Expressions in Equivalent Forms

Grade 7 math · Test · Standards: 7.EE.A.1, 7.EE.A.2

Name: _____ Date: _____ Class: _____

This test covers expanding, factoring and combining linear expressions with rational coefficients, then applying them to perimeter and percent change. Show each step of your work so partial credit can be awarded. Calculators are not allowed. Plan about 45 minutes for the 8 questions.

Standards: 7.EE.A.1, 7.EE.A.2 · **Level:** Grade 7

Time: 45 minutes · 8 questions · Total: 20 points · Calculator: as allowed by your teacher

Question 1 Expand Two Expressions (2 points)

- a. $7(3x - 4)$ (1 point)
- b. $-2.5(4x + 6)$ (1 point)

Question 2 Combine Like Terms (2 points)

Simplify $5x - 8 - 3x + 14 + 2x$.

Question 3 Factor Out the GCF (2 points)

Factor each expression completely.

- a. $28x + 42$ (1 point)
- b. $-9x - 15$ (1 point)

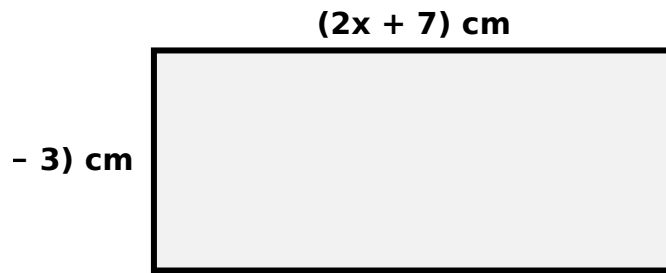
Question 4 Simplify and Verify (3 points)

Consider $2(5x - 3) - 4(x - 2.5)$.

- a. Write an equivalent expression with no parentheses and no like terms. (2 points)
- b. Show that your answer is correct by evaluating both expressions at $x = 3$. (1 point)

Question 5 Rectangle Perimeter (3 points)

A rectangle has the dimensions shown.



A rectangle.

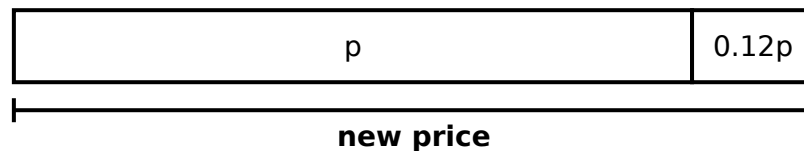
- Write a simplified expression for the perimeter. (2 points)
- Find the perimeter when $x = 6$. (1 point)

Question 6 Fraction Coefficients (2 points)

Simplify $\frac{3}{4}(12x - 8) + \frac{1}{2}(6x + 10)$.

Question 7 Price Increase (3 points)

A store raises the price of every item by 12%. An item cost p dollars before the increase.



New price after an increase.

- Write the new price as a single product of p . (1 point)
- Find the new price of a skateboard that cost \$75. (1 point)
- Explain what the number in your product means. (1 point)

Question 8 Error Analysis (3 points)

A student wrote $-3(2x - 7) = -6x - 21$.

- Identify the error. (1 point)
- Write the correct expansion. (1 point)
- Show with $x = 2$ that the student's answer is not equivalent to the original. (1 point)