

Grade 6 · Writing and Evaluating Algebraic Expressions · Test Answer Key

Common Core 6.EE.A.2, 6.EE.A.3, 6.EE.A.4 · mathovore.fr

This answer key for the algebraic expressions test gives a worked solution and a scoring guide for each of the 9 questions. Award the listed points for each part, and total the score out of 20 points.

Grade 6 Common Core: 6.EE.A.2 · 6.EE.A.3 · 6.EE.A.4

Question 1: Parts of an Expression (2 points)

- a. The coefficient of y is 11
- b. The terms are $6x$, $11y$, and 4 : **3 terms**

Scoring: 1 point for each correct part.

Question 2: Translating Phrases (2 points)

- a. $12+k$ (or $k+12$)
- b. $\frac{w}{5}$ (or $w \div 5$)

Scoring: 1 point for each correct expression.

Question 3: Translating Longer Phrases (2 points)

- a. Twice n is $2n$; 3 less is $2n-3$
- b. The sum is $x+9$; 4 times it is $4(x+9)$

Scoring: 1 point for each correct expression. Award 0 for $3-2n$ in (a) or $4x+9$ in (b).

Question 4: Evaluating with One Variable (2 points)

- a. $5 \times 8 - 12 = 40 - 12 = 28$
- b. $\frac{64}{8} + 8^2 = 8 + 64 = 72$

Scoring: 1 point for each correct value.

Question 5: Evaluating with Two Variables (2 points)

- a. $2 \times 3^2 + 4 = 2 \times 9 + 4 = 18 + 4 = 22$
- b. $(3+4)^2 - 10 = 7^2 - 10 = 49 - 10 = 39$

Scoring: 1 point for each correct value.

Question 6: Cube Formulas (3 points)

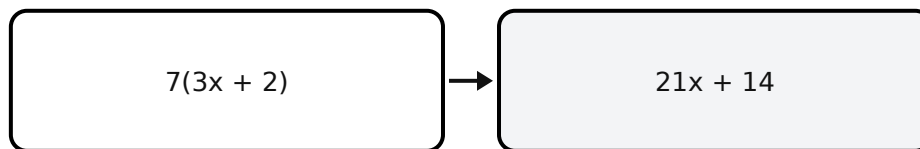
- a. $V = 5^3 = 125 \text{ in}^3$
- b. $A = 6 \times 5^2 = 6 \times 25 = 150 \text{ in}^2$
- c. $V = \left(\frac{1}{2}\right)^3 = \frac{1}{2} \times \frac{1}{2} \times \frac{1}{2} = \frac{1}{8} \text{ in}^3$

Scoring: 1 point for each correct value with units.

Question 7: Equivalent Expressions (3 points)

- a. $7 \times 3x + 7 \times 2 = 21x + 14$
- b. The greatest common factor is 6: $6(2y + 3)$
- c. $5a + 3a = 8a$ and $2 + 9 = 11$: $8a + 11$

Scoring: 1 point for each correct expression.



Distributive property.

Question 8: Testing Equivalence (2 points)

Substitute $x = 1$. First expression: $4(1+2) = 12$. Second expression: $4(1) + 2 = 6$. The values differ, so the expressions are not equivalent. Correctly, $4(x+2) = 4x + 8$.

Maya is **not correct**.

Scoring: 1 point for a valid substitution showing different values; 1 point for the correct conclusion.

$x = 1$	$4(x + 2)$	$4x + 2$
value	12	6

The values differ.

Question 9: Movie Night (2 points)

- a. Tickets cost $3 \times 9 = 27$ and popcorn costs 6¢: $27 + 6¢$
- b. $27 + 6 \times 2 = 27 + 12 = \$39$

Scoring: 1 point for a correct expression; 1 point for the correct total.

Total
20 points