

Grade 6 · Writing and Evaluating Algebraic Expressions · Test

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

Name: _____ Date: ____/____/____ Score: _____

This 45-minute test covers writing, evaluating, and simplifying algebraic expressions (6.EE.A.2, 6.EE.A.3, and 6.EE.A.4). It has 9 questions worth 20 points. Show your work for each question; calculators are not allowed.

Test information

- **Grade:** Grade 6
- **Chapter:** Writing and Evaluating Algebraic Expressions
- **Common Core:** 6.EE.A.2, 6.EE.A.3, 6.EE.A.4
- **Time:** 45 minutes
- **Total:** 20 points (Question 1: 2 pts; Question 2: 2 pts; Question 3: 2 pts; Question 4: 2 pts; Question 5: 2 pts; Question 6: 3 pts; Question 7: 3 pts; Question 8: 2 pts; Question 9: 2 pts)

Question 1: Parts of an Expression (2 points)

Consider the expression $6x+11y+4$.

- Name the coefficient of y . (1 point)
- State the number of terms. (1 point)

$6x$	$+$	$11y$	$+$	4
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Expression $6x+11y+4$.

Question 2: Translating Phrases (2 points)

Write an algebraic expression for each phrase.

- the sum of 12 and k (1 point)
- w divided by 5 (1 point)

Question 3: Translating Longer Phrases (2 points)

Write an algebraic expression for each phrase.

- a. 3 less than twice n (1 point)
- b. 4 times the sum of x and 9 (1 point)

Question 4: Evaluating with One Variable (2 points)

Evaluate each expression when $n=8$.

- a. $5n-12$ (1 point)
- b. $\frac{64}{n}+n^2$ (1 point)

Question 5: Evaluating with Two Variables (2 points)

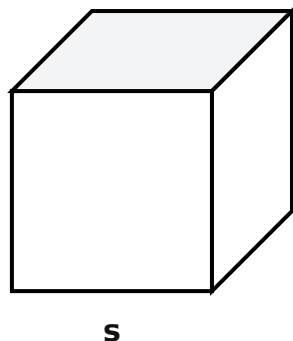
Evaluate each expression when $x=3$ and $y=4$.

- a. $2x^2+y$ (1 point)
- b. $(x+y)^2-10$ (1 point)

Question 6: Cube Formulas (3 points)

A cube with edge length s has volume $V=s^3$ and surface area $A=6s^2$.

- a. Find the volume of a cube with $s=5$ in. (1 point)
- b. Find the surface area of that cube. (1 point)
- c. Find the volume of a cube with $s=\frac{1}{2}$ in. (1 point)



all edges equal

Cube with edge s .

Question 7: Equivalent Expressions (3 points)

- a. Use the distributive property to expand $7(3x+2)$. (1 point)

- b. Write $12y+18$ as the product of 6 and a sum. (1 point)
- c. Simplify $5a+2+3a+9$. (1 point)

Question 8: Testing Equivalence (2 points)

Maya says that $4(x+2)$ and $4x+2$ are equivalent expressions. Decide whether she is correct and justify your answer with numbers.

Question 9: Movie Night (2 points)

Jamal buys 3 movie tickets at \$9 each and b buckets of popcorn at \$6 each.

- a. Write an expression for the total cost in dollars. (1 point)
- b. Find the total cost when $b=2$. (1 point)

3 tickets
\$9 each

b buckets
\$6 each

Jamal's purchases.