



Unit 1 — End-of-Unit Test: Variables and Expressions

Course: Algebra 1 — Merit Education Group **Covers:** Lessons 1–17 | **Format:** Full period (50 min) |

Standards: 9.3.5.5, 9.3.5.7, 9.3.5.8 **QTI Filename:** Assessments/U1 EndOfUnitTest QTI.xml **Directions:**

Show all work on quizzes and summative assessments. Work must be turned in for full credit.

1 SECTION A: VARIABLES AND TRANSLATING (L1.1–L1.2) [6 QUESTIONS]

A1 [T1]

Write an algebraic expression: “A number divided by 6.”

A2 [T1]

Write an algebraic expression: “The sum of a number and 9.”

A3 [T2]

Write an algebraic expression: “Three times a number, increased by 8.”

A4 [T2]

Write an algebraic expression: “5 less than the product of 4 and a number.”

A5 [T2]

Write an algebraic expression: “The quotient of a number and 2, decreased by 10.”

A6 [T3]

Write an algebraic expression: “Half of a number, added to 3 times the same number.”

2 SECTION B: GEMDAS (L1.3–L1.4) [4 QUESTIONS]

B1 [T1]

Evaluate: $5 + 7 \times 2$

B2 [T1]

Evaluate: $(9 - 4) \times 3$

B3 [T2]

Evaluate: $18 - 6 \div 2 + 4$

B4 [T2]

Evaluate: $3 \times (6 + 2) - 4^2$

3**SECTION C: EVALUATING EXPRESSIONS (L1.5–L1.7) [4 QUESTIONS]**

C1 [T1]

Evaluate $m + 15$ when $m = 8$.

C2 [T2]

Evaluate $4n - 7$ when $n = 5$.

C3 [T2]

Evaluate $3x + 2y$ when $x = 4$ and $y = 6$.

C4 [T2]

The perimeter of a square is $P = 4s$. Find the perimeter when $s = 9.5$.

4**SECTION D: SIMPLIFYING (L1.8–L1.11) [5 QUESTIONS]**

D1 [T1]

How many terms in $7x^2 - 4x + 2$? Name the coefficient of the first term.

D2 [T1]

Simplify: $9x + 4x - 2x$

D3 [T2]

Simplify: $6y + 5 - 2y + 8$

D4 [T2]

Simplify: $5(2x - 3)$

D5 [T2]

Simplify: $3(x + 4) + 5x$

5

SECTION E: APPLICATIONS (L1.12–L1.16) [4 QUESTIONS]

E1 [T1]

Are $2x + 3$ and $x + x + 3$ equivalent? Explain.

E2 [T2]

Factor the GCF: $6x + 12$

E3 [T2]

Mia earns \$ 12 per hour babysitting. Write an expression for her earnings after h hours. Then find how much she earns after 5 hours.

E4 [T3]

A shirt costs s dollars. The store has a “buy 2, get 1 free” sale. Write and simplify an expression for the total cost of 5 shirts.

6

SECTION F: PERFORMANCE TASK — FINANCIAL LITERACY (L1.16) [2 QUESTIONS]

F1 [T2]

A jacket costs \$ 45 at Target. It’s on sale for 20% off. Write an expression for the sale price, then calculate the total cost after MN sales tax of 6.875%.

F2 [T3]

You have a \$ 20 Target gift card and want to buy items priced at \$ 8.50, \$ 5.75, and \$ 3.99. Write an expression for the amount you'll pay out of pocket after the gift card and before tax. Then calculate the out-of-pocket cost including 6.875% MN sales tax.

7 SECTION G: MIXED REVIEW [2 QUESTIONS]

G1 [T1]

Simplify: $-7 + 15$

G2 [T2]

A rectangle has length $L = 3x + 2$ and width $W = x$. Write an expression for its perimeter. Hint: $P = 2L + 2W$.

8 SECTION H: FILL-IN-THE-BLANK WORD PROBLEM [1 QUESTION]

H1 [T2]

A jacket costs \$ 45 at Target and is on sale for 20% off. Write an expression for the sale price, then find the sale price in dollars.
