

Grade 6 · Exponents and Order of Operations · Test

Common Core 6.EE.A.1, 6.EE.A.2c · mathovore.fr

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

This 45-minute test covers whole-number exponents, powers of 10, and the order of operations (6.EE.A.1 and 6.EE.A.2c). It has 9 questions worth 20 points. Show your work for each question; calculators are not allowed.

Test information

- **Grade:** Grade 6
- **Chapter:** Exponents and Order of Operations
- **Common Core:** 6.EE.A.1, 6.EE.A.2c
- **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: 2 pts; Question 8: 2 pts; Question 9: 3 pts)

Question 1: Evaluating Powers (2 points)

- Evaluate 4^3 . (1 point)
- Write 10^5 in standard form. (1 point)

Question 2: Using an Exponent (2 points)

Write $6 \times 6 \times 6 \times 6$ using an exponent (1 point), then find its value (1 point).

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Four factors of 6.

Question 3: Addition, Subtraction, Multiplication, Division (2 points)

- Evaluate $28 - 4 \times 5 + 6$. (1 point)
- Evaluate $48 \div 8 \times 3$. (1 point)

Question 4: Grouping Symbols (2 points)

- a. Evaluate $(15-7) \times 4 \div 2$. (1 point)
- b. Evaluate $60 \div (4+6) - 2$. (1 point)

Question 5: Effect of Parentheses (2 points)

- a. Evaluate $7+3^2 \times 2$. (1 point)
- b. Evaluate $(7+3)^2 \times 2$. (1 point)

Question 6: Multi-Step Expressions (3 points)

- a. Evaluate $5 \times (2^3+4) - 9$. (1 point)
- b. Evaluate $90 \div (13-4) + 3^2$. (1 point)
- c. Evaluate $2^4 - 3 \times 2^2$. (1 point)

Question 7: Comparing Powers (2 points)

Write $<$, $>$, or $=$ in each blank.

- a. 2^6 ___ 6^2 (1 point)
- b. 4^3 ___ 2^6 (1 point)

Question 8: Noah's Mistake (2 points)

Noah evaluated $5+3 \times 2^2$ and got 32.

- a. Find the correct value. (1 point)
- b. Explain what Noah did wrong. (1 point)

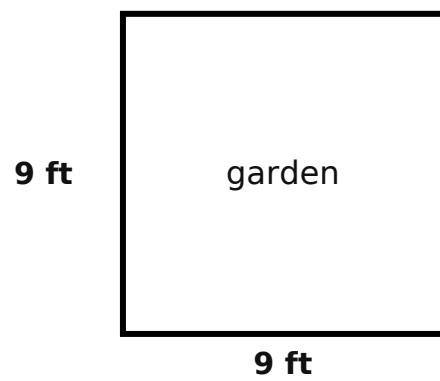
$$5 + 3 \times 2^2$$

Noah's expression.

Question 9: Garden Soil (3 points)

A square garden has sides of 9 ft. Soil costs \$2 per square foot, plus a \$15 delivery fee.

- a. Write an expression with an exponent for the garden's area and evaluate it. (1 point)
- b. Write and evaluate an expression for the total cost of the soil with delivery. (2 points)



The garden is 9 ft by 9 ft.