

Powers, Powers of Ten and Order of Operations

Grade 6 math · Test · Standards: 6.EE.A.1, 6.EE.A.2c

Name: _____ Date: _____ Class: _____

This test has 9 questions worth 20 points and takes about 45 minutes. Show each step, rewriting the expression as you go. Calculators are not allowed.

Standards: 6.EE.A.1, 6.EE.A.2c · **Level:** Grade 6

Time: 45 minutes · 9 questions · Total: 20 points · Calculator: as allowed by your teacher

Question 1 Exponent basics (2 points)

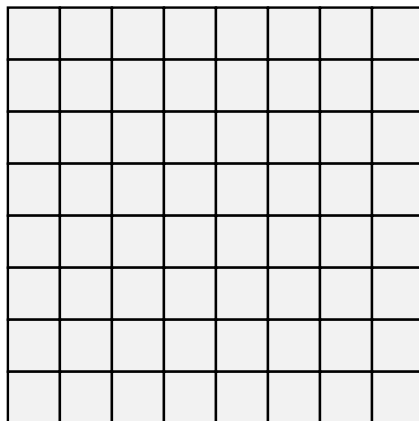
- Write $3 \times 3 \times 3 \times 3 \times 3$ using an exponent and evaluate it. (1 point)
- Evaluate 2^7 . (1 point)

Question 2 Powers of 10 (2 points)

- Write 10^5 in standard form. (1 point)
- Write 10,000 as a power of 10. (1 point)

Question 3 Tiles as a power (2 points)

The patio is made of equal rows and columns of tiles.



8 tiles per side

A square patio of tiles.

- Write the number of tiles as a power. (1 point)
- Evaluate the power. (1 point)

Question 4 Order matters (2 points)

Evaluate each expression.

- a. $30 - 12 \div 3$ (1 point)
- b. $(30 - 12) \div 3$ (1 point)

Question 5 Power and subtraction (2 points)

Evaluate $4^3 - 5 \times 6$.

Question 6 Multi-step expression (3 points)

Evaluate $5 + 2 \times (11 - 3)^2 \div 4$. Show each step.

Question 7 Spot the error (3 points)

Jordan wrote: $7 + 3 \times 2^2 = 40$.

- a. Explain Jordan's mistake. (1 point)
- b. Find the correct value. (2 points)

Question 8 Concert receipt (3 points)

Four friends each buy a \$12 ticket and a \$3 program. The group gets \$6 off the whole order.

4 tickets $\times$ \$12	\$48
4 programs $\times$ \$3	\$12
Group discount	-\$6

Receipt items for Question 8.

- a. Write one expression for the total cost. (1 point)
- b. Evaluate it. (2 points)

Question 9 Power versus product (1 point)

A tile pattern has 3 layers, 3 rows and 3 columns. Write the tile count as a power and say why the value is not 9.