

Grade 6 · Exponents and Order of Operations · Worksheet

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

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

These 10 problems practice whole-number exponents, powers of 10, and the order of operations from Common Core 6.EE.A.1 and 6.EE.A.2c. They begin with writing and evaluating powers, then add grouping symbols and mixed expressions.

Problems 8 through 10 are word problems that ask for an error analysis, a cost expression, and a growing pattern. Show every step and rewrite the expression after each operation.

Grade 6 Common Core: 6.EE.A.1 · 6.EE.A.2c

Problem 1: Writing Products as Powers

Write each product using an exponent.

- a. $5 \times 5 \times 5$
- b. $7 \times 7 \times 7 \times 7 \times 7$
- c. 9×9
- d. $2 \times 2 \times 2 \times 2 \times 2 \times 2$



Six factors of 2.

Problem 2: Evaluating Powers

Evaluate each power.

- a. 3^4
- b. 2^6
- c. 5^3
- d. 8^2



Four factors of 3 make the power in part (a).

Problem 3: Powers of 10

Write each number as a power of 10 or in standard form.

- a. 100,000
- b. 10,000,000
- c. 10^4
- d. 10^6

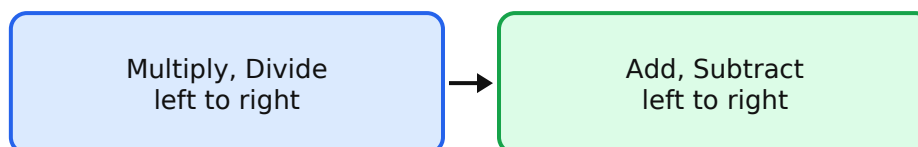
Power	Zeros
10^4	4
10^5	5
10^6	6
10^7	7

The exponent counts the zeros.

Problem 4: Order of Operations Without Exponents

Evaluate each expression.

- a. $5+4\times 3$
- b. $30-4\times 5$
- c. $24\div 4\times 3$
- d. $18-6\div 3+2$



Order for expressions with no parentheses or exponents.

Problem 5: Grouping Symbols

Evaluate each expression.

- a. $(9+3) \times 2$
- b. $40 \div (2+3)$
- c. $5 \times (12-7)$
- d. $36 \div (3 \times 2) + 1$

Problem 6: Exponents in Expressions

Evaluate each expression.

- a. 2×3^2
- b. $(2 \times 3)^2$
- c. $50 - 4^2$
- d. $5^2 + 3^3$

Problem 7: Mixed Expressions

Evaluate each expression.

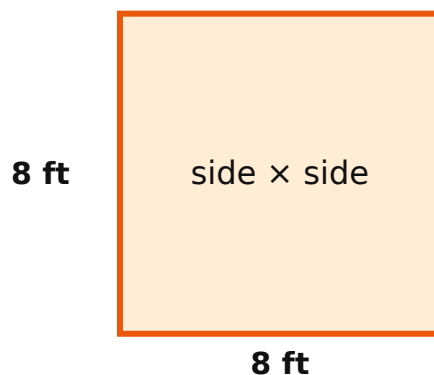
- a. $6 + 2^3 \times 4 - 10$
- b. $100 \div 5^2 + 7$
- c. $3 \times (4 + 2)^2$
- d. $(20 - 2^2) \div 4$

Problem 8: Finding an Error

Maya evaluated $3 + 2 \times 5^2$ and got 125. Explain her error and find the correct value.

Problem 9: Patio Cost

A square patio has sides of 8 ft. Paving costs \$3 per square foot, and delivery costs a flat \$10. Write one expression with an exponent for the total cost, then evaluate it.



The patio is 8 ft by 8 ft.

Problem 10: Chain Message

Mei starts a chain message. On day 1, 3 classmates receive it. Each day after that, every new receiver sends it to 3 people who have not seen it, so the number of new receivers on day n is 3^n .

- Write the number of new receivers on day 4 as a power and evaluate it.
- Find the number of new receivers on day 5.
- Write and evaluate an expression for how many more people receive the message on day 5 than on day 4.

