

Grade 6 - Exponents and Order of Operations - Worksheet

Common Core 6.EE.A.1, 6.EE.A.2c · maths-pdf.fr/en/

Name: _____ Class: _____ Date: ____/____/____

These 20 problems practice whole-number exponents and the order of operations (Common Core 6.EE.A.1 and 6.EE.A.2c). You will write and evaluate powers, simplify numerical expressions, substitute values into formulas, and solve word problems about cubes and growth.

Grade 6 · Common Core State Standards: **6.EE.A.1**, **6.EE.A.2c**

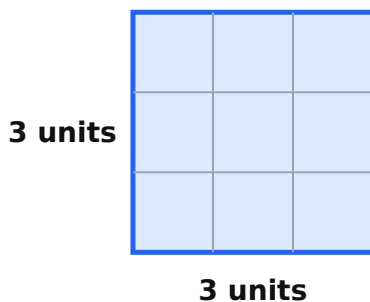
Exercise 1 - Write as a power

Write $5 \times 5 \times 5 \times 5$ as a power. Name the base and the exponent.

Exercise 2 - Expand a power

Write 2^5 as a product of factors, then find its value.

Exercise 3 - Square arrangement



A square with side 3.

The square has a side length of 3. Write its area as a power and find the value.

Exercise 4 - Evaluate a power

Evaluate 3^4 .

Exercise 5 - Powers of ten

Power	10^1	10^2	10^3	10^4
Value	10	100	1,000	10,000

Each power of 10 has as many zeros as the exponent.

Evaluate 10^3 and 10^6 .

Exercise 6 - Power plus a number

Evaluate $4^2 + 3$.

Exercise 7 - Fraction base

Evaluate $\left(\frac{1}{2}\right)^3$.

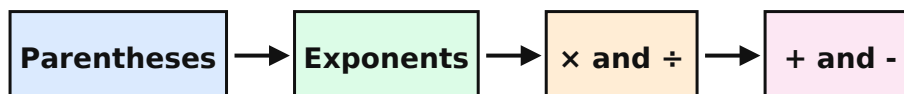
Exercise 8 - Decimal base

Evaluate 0.5^2 .

Exercise 9 - Multiplication before subtraction

Evaluate $18 - 2 \times 5$.

Exercise 10 - Division, addition, and exponent



Work from left to right in each step.

Evaluate $24 \div 4 + 3^2$.

Exercise 11 - Parentheses

Evaluate $5 + 2(8 - 3)$.

Exercise 12 - Exponent before multiplication

Evaluate $3 \times 4^2 - 10$.

Exercise 13 - Grouping with an exponent

Evaluate $(6+4)^2 \div 5$.

Exercise 14 - Substitute a value

Evaluate $3x+5$ when $x=4$.

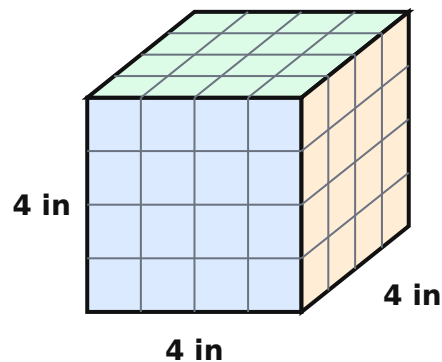
Exercise 15 - Substitute into a power

Evaluate x^2-3 when $x=6$.

Exercise 16 - Two variables

Evaluate $2(a+b)$ when $a=3$ and $b=5$.

Exercise 17 - Volume of a cube



A cube with edge length $s = 4$ inches.

The volume of a cube is $V = s^3$. Find the volume of a cube with edge length 4 inches.

Exercise 18 - Perimeter formula

The perimeter of a rectangle is $P = 2\ell + 2w$. Find P when $\ell = 12$ feet and $w = 7$ feet.

Exercise 19 - Area of a square

The area of a square is $A = s^2$. Find A when $s = 2.5$ meters.

Exercise 20 - Doubling bacteria

Hour	1	2	3	4	5	6
Bacteria	2	4	8	16	32	?

A colony of 1 bacterium doubles every hour.

A colony starts with 1 bacterium and doubles every hour. After n hours there are 2^n bacteria. Find how many there are after 6 hours.

Exercise 21 - Garden plan

Priya plans a square garden with side length 6 feet and a 1-foot-wide path around the outside edge. Use the expression $(s + 2)^2 - s^2$ with $s = 6$ to find the area of the path.