

Power Play: Exponents

The product of multiplying a number by itself is called a **power**. It is written as a **base number** and an **exponent**. The base number is the number being multiplied. The exponent shows how many times the base number is being multiplied by itself.

The diagram shows the equation $10^3 = 10 \times 10 \times 10 = 1,000$. A green arrow points from the label "base number" to the "10" in the power notation. Another green arrow points from the label "exponent" to the "3" in the power notation. A third green arrow points from the label "factors" to the three "10"s in the multiplication part of the equation.

Write out the factors and find out the value.

| | | | | |
|---------|----------|---------|---------|---------|
| $2^2 =$ | $4^3 =$ | $7^3 =$ | $6^4 =$ | $2^5 =$ |
| $3^2 =$ | $10^4 =$ | $3^3 =$ | $5^4 =$ | $8^4 =$ |

Write out the value.

| | | | | |
|------------|---------|---------|----------|---------|
| $6^5 =$ | $8^3 =$ | $9^3 =$ | $10^5 =$ | $2^7 =$ |
| $2^{10} =$ | $4^2 =$ | $6^3 =$ | $7^4 =$ | $4^5 =$ |

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Write the value of the factors using exponents.

$2 \times 2 \times 2$

$3 \times 3 \times 3 \times 3 \times 3$

$6 \times 6 \times 6 \times 6 \times 6$

$8 \times 8 \times 8 \times 8$

4×4

$7 \times 7 \times 7$

$5 \times 5 \times 5 \times 5$

9×9

$6 \times 6 \times 6$

$3 \times 3 \times 3$

$10 \times 10 \times 10 \times 10$

11×11

Fill in all the missing numbers

Factors

Number To Given Power

Standard Notation

$3 \times 3 \times 3$

3^3

27

$2 \times 2 \times 2 \times 2 \times 2 \times 2$

$7 \times 7 \times 7 \times 7 \times 7$

$12 \times 12 \times 12 \times 12$