Powering Up with Exponents Basics

Exponents are sometimes called powers. In pre-algebra, an exponent is a smaller number to the upper right of a letter or number. You read it by calling it a power. Example: $4^2$ would be read as “four to the second power”. Think of exponents with special multiplication rules. Let’s look at one example.

$2^3$

Another way to write this number would be:

$2 \times 2 \times 2$

According to the order of operations, you multiply $2 \times 2$ which equals 4. Then you multiply $4 \times 2$ which equals 8. $2^3 = 8$

In Pre-Algebra, you may see exponents matched with numbers, so a common formula to memorize that will help you recognize exponents is $a^n = a \times a \times a \times a \ldots$ (you will have as many a’s as the number for n).

Here are some additional problems for you to try:

$4^4$ _______ $8^3$ _______ $5^2$ _______

$6^3$ _______ $4^3$ _______ $10^4$ _______

$1^3$ _______ $7^5$ _______ $9^2$ _______
Answer Key:

\[ 4^4 = 4 \times 4 \times 4 \times 4 = 256 \quad 8^3 = 8 \times 8 \times 8 = 512 \quad 5^2 = 5 \times 5 = 25 \]

\[ 6^3 = 6 \times 6 \times 6 = 216 \quad 4^3 = 4 \times 4 \times 4 = 64 \quad 10^4 = 10 \times 10 \times 10 \times 10 = 10,000 \]

\[ 1^3 = 1 \times 1 \times 1 = 1 \quad 7^5 = 7 \times 7 \times 7 \times 7 \times 7 = 16,807 \quad 9^2 = 9 \times 9 = 81 \]