Exponents

When working with exponents there are a few vocabulary words you need to know. **Base** is the number that is to be raised to a given exponent. An **exponent** is the number that tells how many times the base is used as a factor. The **power** is a number obtained by raising a base to an exponent. And finally, the **standard form** of a number is the usual or common way to write a number.

When you multiply a number by itself, you are raising a number by its power. To show that a number has been raised by a power, you use an exponent. For example, 5 x 5 x 5 means that the number 5 has been raised to the third power. The number of the exponent depends on the power that the number has been raised. The exponent also shows how many times the number is a factor.

For example, 5 x 5 x 5 is the same as 5^3, meaning the base number five is raised to the power of three. So, 5^3 =125 means that 5 x 5 x 5 = 125.

Any number to the second power is said to be squared. Any number to the third power is said to be cubed. With all exponents, you indicate that their base numbers a raised to certain powers.

For example:

- 7^2 means “seven to the second power,” which would be 49.
- 9^3 means “nine to the third power,” which would be 729.
- 2^{22} means “two to the twenty-second power,” which would be 1048576.
- 12^3 means “twelve to the third power,” which would be 1728.

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But, what is the value of 6^1 and 6^0?

You can use patterns to find the value of 6^1 and 6^0?

$6^4 = 6 \times 6 \times 6 \times 6$

$6^3 = 6 \times 6 \times 6$

$6^2 = 6 \times 6$

$6^1 = 6$

$6^0 = 1$

Any base raised to the exponent 1 equals the base. So, $6^1 = 6$

Any base raised to the exponent 0 equals the base. So, $6^0 = 6$

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