# Expanded Form and Exponents Step By Step Lesson

1) Write the following value in exponential form:  6 x 6 x 6 x 6 x 6

2)  Write the following value in expanded form:   $7^4$

Explanation:

1) Exponential form is in the form of    $a^b$

where a is our base or number we are multiplying together and b is the exponent or how many times we are multiplying that number by itself.

6 x 6 x 6 x 6 x 6

Our <u>base is 6</u> because it is the number we are multiplying together.

Our <u>exponent is 5</u> because we are multiplying 6 by itself 5 times.

$6^5$

2) $7^4$

We need to identify the base and the exponent this problem. In exponential form, the base is the bigger, size wise, of the two numbers. The 7 is much larger than the 4, so it is the base.

In exponential form, the exponent is the smaller, size wise, of the two numbers. The exponent also sits up a little from the base. In this case, 4 is smaller and sits up a little from the base.  4 is our exponent.

$$\text{base} \longrightarrow 7^4 \longleftarrow \text{exponent}$$

To write a number in expanded form we need to know how many times were are multiplying the base number.  The exponent is the number of times that we will multiply our base number.

$7^4 = 7 \times 7 \times 7 \times 7$  (expanded form)