What Is Representing Repeated Multiplication in Exponential Form?

- When a numerical expression asks us to multiply a number by itself, it look like this:

  6 x 6 7 x 7 12 x 12 34 x 34

- Repeated multiplication is multiplying the same number by itself 2 or more times such as:

  30 x 30

  8 x 8 x 8

- An expo … number and is slight…

  5^2 4^3 10^4 15^8

- An exponent tells how many times to multiply a number by itself.

  $5 \times 5 \rightarrow 5^2$

  $4 \times 4 \times 4 \rightarrow 4^3$

  $10 \times 10 \times 10 \times 10 \rightarrow 10^4$

How to represent repeated multiplications in exponential form:

- When a number is multiplied by itself, this is called repeated multiplication:

  3 x 3 7 x 7 x 7 x 7 5 x 5 x 5 x 5 x 5

- Another way to express this multiplication is to count the number of times the number is multiplied and place an exponent next to the number. The exponent is written smaller and goes to the right and slightly above the number.
  - $30 \times 30 = 30^2$
  - $8 \times 8 \times 8 = 8^3$
  - $21 \times 21 \times 21 \times 21 = 21^4$

- The nur… …o multiply the nun…

Try This:

What would be the exponential form of the following repeated multiplication expressions?

66 x 66 x 66 = _____

15 x 15 = _____

9 x 9 x 9 x 9 _____

305 x 305 x 305 x 305 x 305 x 305 x 305 x 305 = _____