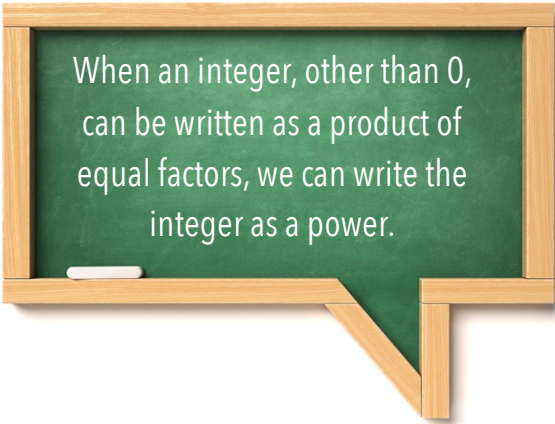


What is a Power?

Consider the following statement describing a power.

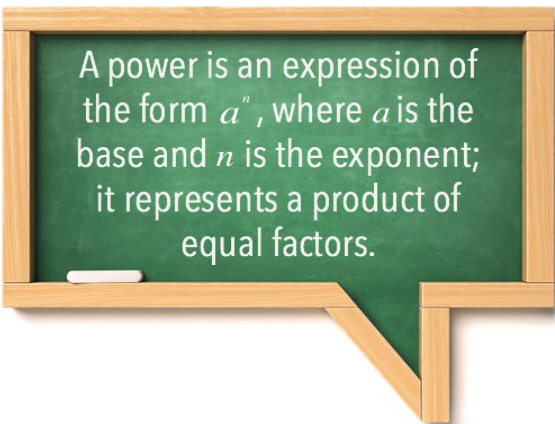
- How would I explain an *integer*?
- How would I explain or show an integer... *written as a product*?
- How would I explain the term *factors*?
- How would I explain and demonstrate writing the integer 16 as a product of equal factors?



When an integer, other than 0, can be written as a product of equal factors, we can write the integer as a power.

Now I'll consider another definition for writing a power.

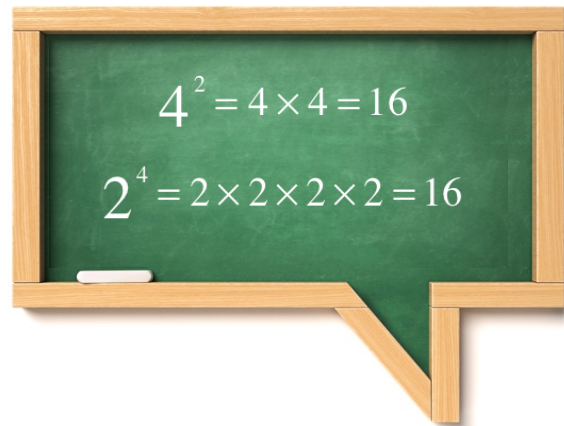
- Using this definition, how would I explain rewriting 4×4 and $2 \times 2 \times 2 \times 2$ as powers?



A power is an expression of the form a^n , where a is the base and n is the exponent; it represents a product of equal factors.

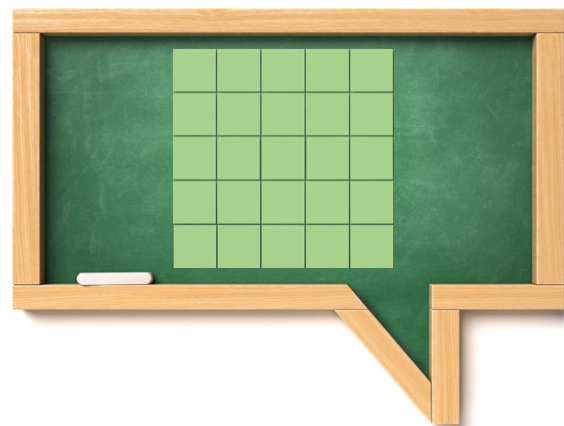
The integer value 16 can be represented in various forms.

- How would I summarize the various forms?
- Which example illustrates the phrase... *square a number*?
- How would I explain a *square number*?



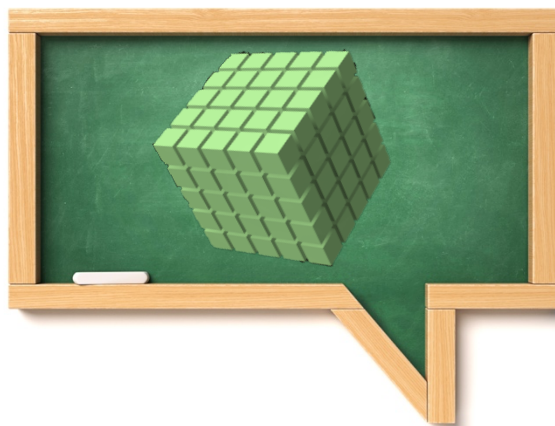
A power with an integer base and exponent 2 is a *square number*. When the base is a positive integer, we can illustrate a *square number*.

- How would I explain the *square number* illustrated in this diagram?
- How would I explain and demonstrate writing this *square number* in three different ways?



A power with an integer base and exponent 3 is a *cube number*.
When the base is a positive integer, we can illustrate a *cube number*.

- How would I explain the *cube number* illustrated in this diagram?
- How would I explain and demonstrate writing this *cube number* in three different ways?



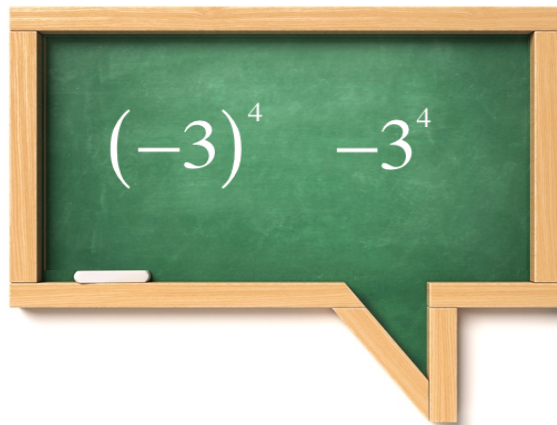
I'll consider another example of an integer written as a power.

- How would I read or state this power?
- How would I explain and demonstrate evaluating this power?



I've adjusted the base on my power.

- How would I read each base?
- How would I explain and illustrate why these two powers are not the same?



What is a Power?

Which statements do I feel confident explaining and demonstrating?

Which statements do I not feel confident explaining and demonstrating?

- ✓ I can explain and write examples of integers
- ✓ I can explain and identify factors of a given number or integer
- ✓ I can represent an integer value as the product of equal factors
- ✓ I can explain and demonstrate writing an integer value as an expression in the form a^n
- ✓ I can demonstrate writing an integer value in three ways... a power, the product of repeated multiplication, and standard form
- ✓ I can explain why the powers $(-a)^n$ and $-a^n$ are not the same

$2ab + 6k$
 $2ab + 6k$

