Chapter 2 Powers and Exponents

Section 2.1 What is a Power?

↳ use powers to represent repeated multiplication

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

For example $16 =$

We can use other exponents as well:

$125 =$

$64 =$

$64 =$

$64 =$

Terminology:

The expression 5^3 is called a power.

5 is called the _____

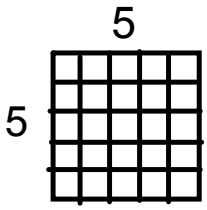
3 is called the _____

The exponent tells us how many times the base gets multiplied.

5^3 means $5 \times 5 \times 5$ and we read 5^3 as 5 cubed.

A power with an integer base and exponent 2 is called a square number.

When the base is a positive integer, we can illustrate a square number using an area model.



There are 3 ways to write 25:

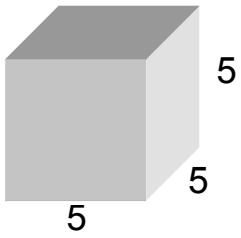
Standard Form:_____

Repeated Multiplication:_____

Power:_____

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 using a volume model.



There are 3 ways to write 125:

Standard Form:_____

Repeated Multiplication:_____

Power:_____

Example 1: Write as a power.

a) $3 \times 3 \times 3 \times 3$

b) $6 \cdot 6 \cdot 6 \cdot 6 \cdot 6$

c) $(-2)(-2)(-2)$

d) $(1)(1)(1)(1)(1)(1)$

e) 12

f) $-(3)(3)$

Example 2: Write as repeated multiplication.

a) 2^7

b) $(-3)^2$

Example 3: Write in standard form.

a) 2^4

b) $(-5)(-5)(-5)(-5)$

Example 4: Evaluate. Identify the base.

a) $(-2)^4$ base =

b) -2^4 base =

c) $-(-2)^4$ base =

d) $-(-2^4)$ base =

NOTE:
If there are an even number of negatives being multiplied, the answer will be positive.

If there are an odd number of negatives being multiplied, the answer will be negative.

Work Sample Questions	Extra Practice
p. 55-57: # 4ac,5ac, 7acef, 8acdf, 9cdef, 11, 12aef, 13adefh, 14adej, 18a, 20ad, 22a	p. 55-56: #4b, 5b, 7b, 8be, 9ab, 10, 12bcd, 13 bcgi, 14bcfghikl, 16, 18b, 20bcef