Name _____ Date _____

Exponents and Square Roots

A number multiplied by itself, such as 4×4, can be written as 4^2. We read 4^2 as 4 to the second power or 4 squared. $4 \times 4 \times 4$ is 4^3 or 4 to the third power or 4 cubed.

$4^2 = 4 \times 4 = 16$
$4^3 = 4 \times 4 \times 4 = 64$

Finding the root of a number is the opposite of finding a power. When you find the square root of 16, or $\sqrt{16}$, ask yourself *what number multiplied times itself equals 16?*

$\sqrt{16} = 4$ because $4 \times 4 = 16$

Find 5^2

$5^2 = 5 \times 5$
$5^2 = 25$

Find 7^3

$7^3 = 7 \times 7 \times 7$
$7^3 = 49 \times 7$
$7^3 = 343$

Find $\sqrt{81}$

$9 \times 9 = 81$
$\sqrt{81} = 9$

Find each answer.

1.	3^2 $3 \times 3 = 9$	$\sqrt{64}$ $8 \times 8 = 64$ $\sqrt{64} = 8$	4^3	7^2	$\sqrt{4}$
2.	$\sqrt{100}$	9^3	6^3	14^2	12^2
3.	8^3	$\sqrt{36}$	5^2	$\sqrt{16}$	1^2
4.	10^3	$\sqrt{144}$	16^3	5^3	6^2
5.	$\sqrt{169}$	8^2	2^3	9^2	$\sqrt{121}$
6.	$\sqrt{25}$	20^2	0^2	4^2	$\sqrt{49}$

Solve.

7. Aaron built a deck that measures 16 feet on each side. What is the area of the deck? (Use the formula for area of a square, $A = s^2$.)

Answer _____

8. Sheila built her children a toy box that measures 2 feet by 2 feet by 2 feet. What is the volume of the box? (Use the formula for the volume of a cube, $V = s^3$.)

Answer _____