Exponents, Roots and Logarithms

Exponents, Roots (such as square roots, cube roots etc) and Logarithms are all related!

Let's start with the simple example of **3 × 3 = 9**:

3 Squared = = 3 × 3 = **9**

Using Exponents we write it as:

$$3^2 = 9$$

When any of those values are missing, we have a question. And (sadly) a **different notation**:

$3^2 = ?$

is the exponent question "what is 3 squared?": $3^2 = 9$

$?^2 = 9$

is the root question "what is the square root of 9?": $\sqrt{9} = 3$

$3^? = 9$

is the logarithm question "what is log base 3 of 9?": $\log_3(9) = 2$

So when you are stuck trying to solve questions with logs, roots or exponents just remember that!

One more example:

$$10^3 = 1000$$

$10^3 = ?$

"What is 10 cubed?": $10^3 = 1000$

$?^3 = 1000$

"What is the cube root of 1000?": $\sqrt[3]{1000} = 10$

$10^? = 1000$

"What is log base 10 of 1000?": $\log_{10}(1000) = 3$

Squares and Square Roots (A)

Instructions: Find the square root or square of each integer.

$\sqrt{256} =$	$\sqrt{4} =$	$\sqrt{169} =$	$\sqrt{100} =$
$\sqrt{121} =$	$\sqrt{196} =$	$\sqrt{16} =$	$\sqrt{64} =$
$\sqrt{1} =$	$\sqrt{9} =$	$\sqrt{49} =$	$\sqrt{144} =$
$\sqrt{225} =$	$\sqrt{81} =$	$\sqrt{25} =$	$\sqrt{36} =$
$11^2 =$	$13^2 =$	$14^2 =$	$10^2 =$
$12^2 =$	$1^2 =$	$15^2 =$	$6^2 =$
$9^2 =$	$3^2 =$	$4^2 =$	$16^2 =$
$8^2 =$	$7^2 =$	$5^2 =$	$2^2 =$