Perfect Squares

A perfect square is an integer that is the square of another integer. In other words, a number is a perfect square if it can be expressed as:

$$n^2 = m$$

where m is the perfect square and n is an integer.

10^2	$=$	100	20^2	$=$	400
9^2	$=$	81	19^2	$=$	361
8^2	$=$	64	18^2	$=$	324
7^2	$=$	49	17^2	$=$	289
6^2	$=$	36	16^2	$=$	256
5^2	$=$	25	15^2	$=$	225
4^2	$=$	16	14^2	$=$	196
3^2	$=$	9	13^2	$=$	169
2^2	$=$	4	12^2	$=$	144
1^2	$=$	1	11^2	$=$	121

Squares and Square Roots as Inverses

$$\boxed{\sqrt{x^2} = x}$$

$x^2 + 1$	$=$	17	Given
x^2	$=$	$17 - 1$	Subtract 1 from both sides
x^2	$=$	16	
$\sqrt{x^2}$	$=$	$\sqrt{16}$	Take square roots on both sides
$x = 4$		$x = -4$	Two solutions

$2x^2 - 1$	$=$	49	Given
$2x^2$	$=$	$49 + 1$	Add 1 to both sides
$2x^2$	$=$	50	
x^2	$=$	$\frac{50}{2}$	Divide by 2 on both sides
x^2	$=$	25	
$\sqrt{x^2}$	$=$	$\sqrt{25}$	Take square roots on both sides
$x = 5$		$x = -5$	Two solutions