Name _____ Date _____

SOLVING EQUATIONS WITH SQUARE ROOTS

Taking the square root of a number is the opposite, or inverse, of squaring it.
So, you can solve some equations using square roots.

Let's try it! Solve $x^2 = 9$.

$x^2 = 9$

$\sqrt{x^2} = \sqrt{9}$ Take the square root of both sides of the equation.

$x = \pm 3$ Since $3^2 = 3 \cdot 3 = 9$ and $(-3)^2 = (-3) \cdot (-3) = 9$, both 3 and -3 are square
roots of 9. You can write this as ± 3.

In the example above, you can simplify the square root of 9 to get ± 3 since 9 is a perfect square.

Consider solving an equation like $x^2 = 11$. Because 11 is not a perfect square, you would need to write your answer using the square root symbol. So, the exact solution of $x^2 = 11$ is $x = \pm\sqrt{11}$.

Try it yourself! Solve each equation for the variable. Don't forget to check if you're taking the square root of a perfect square or not!

$a^2 = 36$	$m^2 = 4$	$g^2 = 68$
$j^2 = 16$	$q^2 = 20$	$b^2 = 144$
$r^2 = 55$	$d^2 = 81$	$s^2 = 225$
$f^2 = 141$	$w^2 = 100$	$h^2 = 200$
$c^2 = 289$	$y^2 = 400$	$z^2 = 180$
$v^2 = 900$	$k^2 = 625$	$p^2 = 250$