Name _____ Class _____ Date _____

Reteaching 9-4

Solving Quadratic Equations

OBJECTIVE: Solving quadratic equations using square roots

MATERIALS: Calculator

Quadratic equations written in the form $x^2 = c$ can be solved by finding the square root of each side.

Value of c	No. of Real Solutions	x-Intercepts
$c > 0$	2	$(+\sqrt{c}, 0)(-\sqrt{c}, 0)$
$c = 0$	1	$(0, 0)$
$c < 0$	0	none

Note: Every parabola has two roots, but they are not always real number roots; they could be complex or a double root.

Example

Solve $3x^2 - 48 = 0$.

$3x^2 - 48 + 48 = 0 + 48$ ← **Add 48 to each side.**

$3x^2 = 48$

$x^2 = 16$ ← **Divide each side by 3.**

$x = \pm\sqrt{16}$ ← **Find the square roots.**

$x = \pm 4$ ← **Simplify.**

$3(4)^2 - 48 = 0$ $\quad$ $3(-4)^2 - 48 = 0$ ← **Check the results in the original equation.**

$3(16) - 48 = 0$ $\quad$ $3(16) - 48 = 0$

$48 - 48 = 0$ $\quad$ $48 - 48 = 0$

Exercises

Fill in the following chart to find the solutions to each equation.

	1. $4x^2 = 100$	**2.** $2x^2 - 6 = 0$	**3.** $x^2 + 4 = 0$	**4.** $81x^2 - 5 = 20$
Rewrite in $ax^2 = c$ form.				
Rewrite in $x^2 = \frac{c}{a}$ form.				
Find the square roots.				
Solutions				

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