Section 7.3

Algebra II: Square Roots and solving equations

Essential Questions:
How do I solve an equation with a square root? How many answers will I get?

The Same Way we solve equations. ②

Solve the following. You need to get two answers.

1) $x^2 = 36$

$\sqrt{x^2} = \sqrt{36}$

$x = \sqrt{36}$

$x = 6$ and $x = -6$

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

$= x$

$\sqrt{36}$
$\sqrt{6 \cdot 6}$
$= 6$

2) $a^2 = 25$

$\sqrt{a^2} = \sqrt{25}$

$a = 5$ and $a = -5$ or $a = \pm 5$

3) $y^2 - 7 = 57$

$\quad +7 \quad +7$

$y^2 = 64$

$\sqrt{y^2} = \sqrt{64}$

$y = \pm 8$

4) $x^2 + 3 = 27$

$\quad -3 \quad -3$

$x^2 = 24$

$\sqrt{x^2} = \sqrt{24}$

$x = \pm 2\sqrt{6}$

$\sqrt{24}$
$\sqrt{4 \cdot 6}$
$\sqrt{(2 \cdot x)2 \cdot 3}$
$2\sqrt{6}$

Name_____

Find two solutions of the equation.

1) $x^2 = 64$ 2) $x^2 = 81$ 3) $y^2 = 9$ 4) $n^2 = 49$

5) $n^2 = 121$ 6) $x^2 = 144$ 7) $y^2 - 1 = 35$ 8) $y^2 - 5 = 20$

9) $x^2 = 12$ 10) $n^2 = 10$ 11) $x^2 + 2 = 8$ 12) $y^2 - 7 = 20$

13) $x^2 + 5 = 23$ 14) $n^2 - 2 = 40$ 15) $x^2 - 1 = 3$ 16) $y^2 + 5 = 21$

17) $n^2 = 40$ 18) $x^2 = 56$ 19) $x^2 - 1 = 75$ 20) $y^2 + 3 = 80$