Name:_____ Date:_____

Notes
Algebra Section 2.7
Pages 110-116

Goal: "Find the square root of real numbers"
"Compare real numbers"

Vocabulary:

Square Roots: _____

Radicand: _____

Perfect Square: _____

Irrational Number: _____

Real Numbers: _____

radical symbol → $\sqrt{a}$ ← radicand

Example: $-\sqrt{81}$ "Take the opposite of $\sqrt{81}$.

Evaluate the expression:

Ex: $-\sqrt{9}$

Ex: $\sqrt{25}$

Ex: $\pm\sqrt{64}$

Ex: $-\sqrt{81}$

Ex: $\pm\sqrt{100}$

Ex: $\sqrt{121}$

Ex: $-\sqrt{400}$

Ex: $\sqrt{160{,}000}$

Ex: $\sqrt{4900}$

Ex: $\sqrt{0.0081}$

Ex: $\sqrt{0.000121}$

Solve:

Ex: $x^2 = 144$ **Ex:** $x^2 = 64$ **Ex:** $x^2 = 1$

<u>Approximate Square Roots</u>:

$\sqrt{40}$ 40 is not a perfect square. The greatest perfect square less than 40 is 36. The least perfect square greater than 40 is 49.

$\sqrt{36}$ $\sqrt{40}$ $\sqrt{49}$

6 7

The $\sqrt{40}$ is between 6 and 7.

Ex: $\sqrt{32}$ **Ex:** $\sqrt{103}$

Ex: $-\sqrt{48}$ **Ex:** $-\sqrt{350}$

Ex: The top of a folding table is a square whose area is 945 square inches. Approximate the side length of the tabletop to the nearest inch.

Ex: The top of a square box has an area of 320 square inches. Approximate the side length of the box top to the nearest inch.

Irrational Number:

Classify the following numbers using all names that apply:

Number	Rational?	Irrational?	Integer?	Whole?
$\sqrt{24}$				
$\sqrt{100}$				
$-\sqrt{81}$				
$-\sqrt{25}$				
$\sqrt{361}$				
$\sqrt{30}$				

Order the following numbers from least to greatest:

Ex: $\frac{4}{3}, -\sqrt{5}, \sqrt{13}, -2.5, \sqrt{9}$

Ex: $-\sqrt{10}, \frac{19}{5}, -3, \sqrt{12}, \sqrt{16}$

Ex: $-\frac{9}{2}, 5.2, 0, \sqrt{7}, 4.1, -\sqrt{20}$