Name:_____ Date:_____

Notes
Algebra Section 2.7
Pages 110-116

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

Vocabulary:

Square Roots: One of two equal _____ of a _____.

Radicand: The _____ or _____ inside a _____ symbol.

Perfect Square: The _____ of an _____ (will not have a decimal).

Irrational Number: A _____ that cannot be written as a _____. It doesn't _____ or _____.

Real Numbers: The set of all _____ and _____ numbers.

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

Evaluate:
$1^2 =$
$2^2 =$
$3^2 =$
$4^2 =$
$5^2 =$
$6^2 =$
$7^2 =$
$8^2 =$
$9^2 =$
$10^2 =$

List all of the perfect squares:

Evaluate:
$\sqrt{1} =$
$\sqrt{4} =$
$\sqrt{9} =$
$\sqrt{16} =$
$\sqrt{25} =$
$\sqrt{36} =$
$\sqrt{49} =$
$\sqrt{64} =$
$\sqrt{81} =$
$\sqrt{100} =$

Examples: $-\sqrt{81}$ "Take the opposite of $\sqrt{81}$.
$\pm\sqrt{9}$ "The $\sqrt{9}$ can be either positive or negative"

Evaluate each 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:** $\sqrt{16}$

Exponents with a negative base:

Examples:
$(-3)^2$ $(-2)^3$ $(-5)^2$ $(-3)^4$

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

Approximate Square Roots:

$\sqrt{40}$ 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:** $\sqrt{5}$

Irrational Number:

Classify the following numbers using all names that apply:

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