Activity for 4.1 – State the area of each square, then represent the area using a power. State the dimension of one of the sides of each square.



If we are given the area of a square and we want to determine the measurement of one of its sides, what function would we use to accomplish this?

## **4.1 – Radical Expressions – Square Root**

Use the terms *index*, *radicand*, and *square root* to label the following expression:



**Class Notes** – Evaluate each expression that has a perfect square for its radicand. If an expression contains a radicand that is not a perfect square, write "need calculator".

	$\sqrt{81}$	$\sqrt{42}$	√121	$\sqrt{5}$
$\frac{\mathbf{LP\#2}}{\sqrt{36}}$	$\sqrt{11}$	$\sqrt{49}$	$\sqrt{1}$	$\sqrt{72}$

**Class Notes –** Evaluate each expression. State whether the result is rational or irrational. Let w = 2, x = 3, and y = 4.

$\frac{LP#3}{\sqrt{w}}$	$\sqrt{x}$	$\sqrt{y}$	$\sqrt{12x}$
$\frac{\mathbf{LP\#4}}{\sqrt{x-w}}$	$\sqrt{w+x+y}$	$\sqrt{3x+4y}$	$\sqrt{5y-2x}$

**Class Notes –** If the radical expression has a perfect radicand, simplify it. If it does not contain a perfect radicand, write "not now".

$\frac{\mathbf{LP\#5}}{\sqrt{x^2}}$	$\sqrt{m^2}$	$\sqrt{p^3}$	$\sqrt{w^2}$
$\frac{\mathbf{LP\#6}}{\sqrt{n}}$	$\sqrt{k^2}$	$\sqrt{d^2}$	$\sqrt{y^3}$

1		
R#1	$\sqrt{144}$	$\sqrt{h^2}$
$\sqrt{9}$		
R#2	$\sqrt{196}$	$\sqrt{b^2}$
$\sqrt{64}$		VC
R#3	$\sqrt{400}$	$\sqrt{a^2}$
$\sqrt{4}$		Va

**Review** – Evaluate or simplify each expression.

## Homework –

Evaluate each expression.

1)	$\sqrt{64}$	2) $\sqrt{121}$	<b>3</b> ) $\sqrt{25}$	<ol> <li>√225</li> </ol>
5)	$\sqrt{49}$	<b>6</b> ) $\sqrt{81}$	<ol> <li>√196</li> </ol>	<b>8</b> ) $\sqrt{144}$
9)	$\sqrt{36}$	<b>10</b> ) $\sqrt{4}$	11) \sqrt{16}	12) \sqrt{9}

Evaluate each expression. State whether the result is rational or irrational. Let w = 5, x = 1, and y = 8. **13**)  $\sqrt{20w}$  **14**)  $\sqrt{7x}$  **15**)  $\sqrt{y + y}$  **16**)  $\sqrt{x + y}$ 

- **17**)  $\sqrt{10x w}$  **18**)  $\sqrt{2w + 7x + y}$  **19**)  $\sqrt{4x + 4y}$  **20**)  $\sqrt{4w 3x}$
- 21)  $\sqrt{2y}$  22)  $\sqrt{6w-5x}$  23)  $\sqrt{10w-3y}$  24)  $\sqrt{10y+8w+x}$