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:

$$
\sqrt[2]{25}=5
$$

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".

| LP\#1 <br> $\sqrt{16}$ | $\sqrt{81}$ | $\sqrt{42}$ | $\sqrt{121}$ | $\sqrt{5}$ |
| :--- | :--- | :--- | :--- | :--- |
| LP\#2 <br> $\sqrt{36}$ | $\sqrt{11}$ | $\sqrt{49}$ | $\sqrt{1}$ | $\sqrt{72}$ |

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

| LP\#3 <br> $\sqrt{w}$ | $\sqrt{x}$ | $\sqrt{y}$ | $\sqrt{12 x}$ |
| :--- | :--- | :--- | :--- |
| LP\#4 <br> $\sqrt{x-w}$ | $\sqrt{w+x+y}$ | $\sqrt{3 x+4 y}$ | $\sqrt{5 y-2 x}$ |
|  |  |  |  |

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

| LP\#5 <br> $\sqrt{x^{2}}$ | $\sqrt{m^{2}}$ | $\sqrt{p^{3}}$ | $\sqrt{w^{2}}$ |
| :--- | :--- | :--- | :--- |
| LP\#6 <br> $\sqrt{n}$ | $\sqrt{k^{2}}$ | $\sqrt{d^{2}}$ | $\sqrt{y^{3}}$ |

Review - Evaluate or simplify each expression.

| R\#1 <br> $\sqrt{9}$ | $\sqrt{144}$ | $\sqrt{h^{2}}$ |
| :--- | :--- | :--- |
| R\#2 <br> $\sqrt{64}$ | $\sqrt{196}$ | $\sqrt{b^{2}}$ |
| R\#3 <br> $\sqrt{4}$ | $\sqrt{400}$ | $\sqrt{a^{2}}$ |

Homework -
Evaluate each expression.

1) $\sqrt{64}$
2) $\sqrt{121}$
3) $\sqrt{25}$
4) $\sqrt{225}$
5) $\sqrt{49}$
6) $\sqrt{81}$
7) $\sqrt{196}$
8) $\sqrt{144}$
9) $\sqrt{36}$
10) $\sqrt{4}$
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) $\sqrt{20 w}$
14) $\sqrt{7 x}$
15) $\sqrt{y+y}$
16) $\sqrt{x+y}$
17) $\sqrt{10 x-w}$
18) $\sqrt{2 w+7 x+y}$
19) $\sqrt{4 x+4 y}$
20) $\sqrt{4 w-3 x}$
21) $\sqrt{2 y}$
22) $\sqrt{6 w-5 x}$
23) $\sqrt{10 w-3 y}$
24) $\sqrt{10 y+8 w+x}$

