

Evaluating Roots

Square Roots

A **square root** is the “reverse” of a square.

Example 1:

a.) $\sqrt{25}$

NOTE: $\sqrt{\quad}$ is called a radical sign and is the mathematical symbol for a square root.

To evaluate $\sqrt{25}$ we ask what number do you square to get **25**?

Answer: **5**

NOTE: It should be mentioned that the symbol $\sqrt{\quad}$ represents the positive or principal square root of a number.

b.) $\sqrt{100} =$

c.) $\sqrt{144} =$

d.) $\sqrt{0} =$

e.) $\sqrt{1} =$

f.) $\sqrt{-4} =$

We ask, what number do you square to get **-4** is there such a number?

Example 2:

Simplify

a.) $\sqrt{x^2}$

b.) $\sqrt{x^4}$

c.) $\sqrt{x^6}$

d.) $\sqrt{x^{50}}$

Example 3:

a.) $\sqrt{\frac{25}{16}}$
 $\sqrt{\frac{25}{16}} = \frac{\sqrt{25}}{\sqrt{16}} = \frac{5}{4}$

b.) $\sqrt{\frac{1}{4}}$

Example 4:

a.) $\sqrt{3^2 + 4^2}$

You must simplify what is underneath the radical first

$$= \sqrt{9 + 16} = \sqrt{25} = \boxed{}$$

b.) $\sqrt{5^2 - 4^2}$

$$= \sqrt{25 - 16} = \sqrt{9} = \boxed{}$$

Evaluate:

1. $\sqrt{81}$

2. $\sqrt{-9}$

3. $\sqrt{x^{100}}$

4. $\sqrt{\frac{16}{121}}$

5. $\sqrt{10^2 - 6^2}$