**How do we solve radical equations?**

1.) \_\_\_\_\_\_\_\_\_\_\_\_ the radical on one side of the equation.

2.) Raise **\_\_\_\_\_\_\_\_\_\_\_\_\_** of the equation to the nth power.

*(nth power = \_\_\_\_\_\_\_ value)*

3.) Simplify and solve.

4.) Check your solution(s) for extraneous solutions.

**\*Solutions that cause the equation to be \_\_\_\_\_\_\_\_\_\_\_\_.**

**Examples: Solve. Remember to check for extraneous solutions.**

|  |  |
| --- | --- |
| 1.)  | 2.)  |
| 3.)  | 4.)  |
| 5.)  |

**How do we solve equations with rational exponents?**

1.) Isolate the on one side of the equation.

2.) Raise **BOTH SIDES** of the equation to the \_\_\_\_\_\_ of rational exponent.



3.) Simplify and solve.

4.) Check your solution(s) for extraneous solutions.

**Examples: Solve. Remember to check for extraneous solutions.**

|  |  |
| --- | --- |
| 6.)  | 7.)  |

**How do we solve equations with whole number exponents?**

1.) Isolate the .

2.) Nth root both sides using the exponent value.

(nth root = \_\_\_\_\_\_\_\_\_\_ value)

\*Any time you apply a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, you must add a \_\_\_\_\_\_\_ in front of your answer.

Your exponent, called the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, will **\_\_\_\_\_\_\_\_\_\_\_\_\_\_** the number of solutions.

**Examples: Solve the equation.**

|  |  |
| --- | --- |
| **8.)**  | **9.)**  |
| **10.)**  |

When applying radical functions, we use their properties to solve real-world problems. To do this, we generally **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** in given information into the equation and **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** for the required variable.

**Example 11:**

The formula  represents the swing of a pendulum. S is the time in seconds to swing back and forth, and L is the length of the pendulum in feet. Find the length of a pendulum that makes a single swing in 2.5 seconds. (Round your answer to 3 decimal places.)