**A radical expression is made up of 3 parts:**



**To Simplify a Radical Expression:**

1.) Identify the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

2.) Break down the number under the radical into any 2 factors. Continue to break down factors until you reach all prime numbers. **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ ALL OF THE PRIME NUMBERS.**

3.) Use the index to determine **"how many of the same number you need in order to take \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of those numbers to the outside of the radical."** Repeat this for all sets that you can make.

4.) **\_\_\_\_\_\_\_\_\_\_\_\_\_\_** all of the numbers you bring to the **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** of the radical. Multiply any remaining numbers together on the inside.

5.) For any variables under the radical, take the **exponent and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ by the index.** The whole number of times it divides is the exponent to the variable on the \_\_\_\_\_\_\_\_\_\_\_\_\_ of the radical and the remainder is the exponent to the variable on the \_\_\_\_\_\_\_\_\_\_\_\_\_ of the radical.

**\*For any common variable on the outside of the radical, \_\_\_\_\_\_\_\_\_\_\_ their exponents together.**

**Examples: Simplify completely.**

|  |  |
| --- | --- |
| 1.)  | 2.)  |
| 3.)  | 4.) |
| 5.) | 6.)  |