How to simplify a radical?

Method 1: Use perfect square (or cube) factors
- Rewrite the radical so there are no perfect square (or cube) factors under the radical sign.
- Factor the number, trying to find a perfect square (or cube) factors.
- Rewrite each factor under its own radical symbol.
- Simplify the square(or cube) root of each perfect square (or cube).
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Method 2: Use prime factors
- Write the prime factorization.
- Group pairs of factors to form perfect squares/cubes.
- Simplify; Take the root of the perfect squares/cubes.
- Write your answer in simplified form.

Example 3: