

# [Simplifying radicals](https://assignbuster.com/simplifying-radicals/)

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Week Three Discussion: Simplifying Radicals In this discussion, we will simplify and compare equivalent expressions written both in radical form and with rational (fractional) exponents. Each expression will be simplified using the rules of exponents that are Product rule, Quotient rule and Reciprocal rule.
The two expressions need to be simplified are Problem 42. and Problem 101. .
#42. First rewriting each number as a prime to a power
Using the power rule to multiplying the inner exponents
simplifying
Multiplication of 3 and (-2/3) results in -2, and multiplication of 3 and (-1/3) results in -1.
The negative exponent makes a reciprocal of base number and exponent
Using the product rule to multiplying expression
Adding exponent
The final simplified answer is 1/3, which is the principal root of the expression
For solving above expression, we do not require use of the Quotient rule.
#101. Using the power rule to multiply outer exponents
Simplifying
Using the product rule to multiplying expression
Simplifying
Rewriting it in the equivalent radical form.
The final simplified answer is .
We can write as . Here, the denominator of exponent goes as an nth root of the base number b and power m.
I think that the rational (fractional) exponents form without radicals, works better for the simplification process. Because, we need to change radical expression into rational (fractional) exponents containing the numerator for power and the denominator for nth root for simplifying the expression. It will be not easier to simplifying any radical expression that contains many radical expressions without changing its form.