

Math 172 – Section 7.4: Simplifying Radicals

A radical is simplified if:

1. It has no perfect powers of the index under the radical sign:
 - there are no perfect squares under the $\sqrt{\quad}$ sign
 - there are no perfect cubes under the $\sqrt[3]{\quad}$ sign
 - there are no perfect powers of n under the $\sqrt[n]{\quad}$ sign
2. There are no radicals in the denominator, including
 - no fractions inside radical sign

Examples:

simplified	not simplified
$\sqrt{5}$	$\sqrt{8}$
$\sqrt[4]{x^3}$	$\sqrt[3]{x^4}$
$\sqrt{15}$	$\frac{1}{\sqrt{15}}$
$\frac{\sqrt{2}}{2}$	$\frac{2}{\sqrt{2}}$
$\frac{\sqrt{15}}{2}$	$\sqrt{\frac{15}{2}}$