Radicals

$$A \sqrt[n]{x}$$

A = coefficient

n = index

√ = radical

x = radicand

Like vs. Unlike Radicals

√3 and 2√3	2√3 and 2√4
radicands are the same	radicands are not the same

Mixed vs. Entire

Mixed	Entire
2√3	√12
$^3\sqrt{5}$	$^3\sqrt{40}$
a≠1	a=1

Mixed to Entire

x√3) =√(x)(x)(x)(3)) =√3x²

$^3\sqrt{4x}$) =$^3\sqrt{(x)(x)(x)((x)(4)(x))}$ = $^3\sqrt{4x}$

Entire to Mixed

√50 = (Factor tree) √(5)(5)(2)) = 5√2

x√18⁴ = (Factor tree [18 = {2,9}] Perfect square) = x√9√2√x⁴√y = (3x)x²√2y) = 3x²√2y

Factor the radicand, so all factors are outside and look for perfect squares.

x√18x⁴y)

Entire to Mixed

√50 = (Factor tree) √(5)(5)(2)) = 5√2

x√18x⁴y)