## 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)