Simplifying Radical Expressions:

\[ \sqrt{4} \cdot \sqrt{9} \quad \text{and} \quad \sqrt{49} \]

\[ 2 \cdot 3 \quad \frac{6}{6} \]

**Multiplication and Division Properties of Radicals**

For \( a, b \in \mathbb{R} \) and \( \sqrt{a}, \sqrt{b} \in \mathbb{R} \):

1) \( \sqrt{a} \cdot \sqrt{b} = \sqrt{ab} \)

2) \( \frac{\sqrt{a}}{\sqrt{b}} = \sqrt{\frac{a}{b}} \)

ex. \( \sqrt{24} \quad 5\sqrt{18} \)

\( \sqrt{4} \cdot \sqrt{9} \quad 2\sqrt{6} \)

For a radical to be simplified, these three conditions must be met:

1) The exponents in the radicand must be SMALLER than the index.
2) No fractions in radicand.
3) No radicals in denominator.