

6-2 Properties of Radicals- Simplification-product/quotient properties

a) $\sqrt[n]{a} \cdot \sqrt[n]{b} = \sqrt[n]{ab}$

Example- $\sqrt{5} \cdot \sqrt{2} = \sqrt{10}$

b) $\sqrt[n]{\frac{a}{b}} = \frac{\sqrt[n]{a}}{\sqrt[n]{b}}$

Example- $\sqrt{\frac{64}{49}} = \frac{\sqrt{64}}{\sqrt{49}} = \frac{8}{7}$

You can simplify a fraction under a radical

1. $\sqrt{\frac{10}{90}} = \sqrt{\frac{1}{9}} = \frac{1}{3}$

2. $\sqrt{50}$

3. $\sqrt{20}$

4. $\sqrt{72}$

5. $\sqrt{98}$

6. $\sqrt{300}$

7. $\sqrt[3]{54}$

8. $\sqrt{125}$

9. $\sqrt{\frac{8}{9}}$

10. $\sqrt{\frac{50}{49}}$

11. When have a variable do one at a time

a. $\sqrt[2]{x^7} = \sqrt{x} \cdot \sqrt{x} \cdot \sqrt{x} \cdot \sqrt{x} \cdot \sqrt{x} \cdot \sqrt{x} \cdot \sqrt{x}$

b. $\sqrt{36w^3} = \sqrt{36} \cdot \sqrt{w^2} \cdot \sqrt{w}$

c. $\sqrt{2a^2b}$

d. $\sqrt[3]{\frac{r^5}{s^3}} = \frac{\sqrt[3]{r^3 \cdot r^2}}{s}$

e. $\sqrt[5]{32z^{10}x^{11}}$