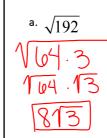
U7L4: Simplifying Radicals

Students can multiply and divide radicals.
Students can simplify radicals and write exact answers.

Multiplication Property of Square Roots

For any numbers $\triangle \ge 0$ and $\bigcirc \ge 0$,

Example 1: Simplify



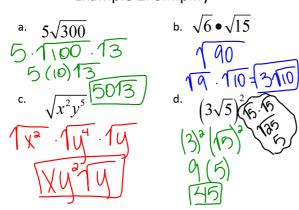
b.
$$\sqrt{16a^3}$$

$$\sqrt{16 \cdot 0^3 \cdot 0}$$

$$\sqrt{16 \cdot 10^8 \cdot 10}$$

$$\sqrt{16 \cdot 10^8 \cdot 10}$$

Example 2: Simplify



Division Property of Square Roots

For any numbers $\frac{a \ge 0}{16}$ and $\frac{b > 0}{16}$,

Example 3: Simplify

a.
$$\sqrt{\frac{11}{49}} = \frac{\sqrt{11}}{\sqrt{49}}$$
$$= \sqrt{\frac{11}{11}}$$

$$\sqrt{\frac{25}{b^4}} = \sqrt{\frac{25}{16^4}}$$

$$= \sqrt{\frac{5}{b^3}}$$

Example 4: Simplify

a.
$$\frac{\sqrt{96}}{\sqrt{12}} = \frac{\sqrt{36}}{10}$$

$$= \sqrt{8}$$

$$= \sqrt{4 \cdot \sqrt{2}}$$
b. $\sqrt{\frac{25c^3}{b^2}} = \frac{\sqrt{35c^3}}{\sqrt{16^3}}$

$$= \frac{\sqrt{35} \cdot \sqrt{c^3} \cdot \sqrt{c}}{\sqrt{8}}$$

$$= \frac{\sqrt{5c\sqrt{c}}}{b}$$

Example 5: Simplify

