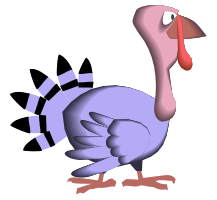


key

Unit 9 -  
Simplify Radicals



Given the radical,  $\sqrt{\frac{10}{16}}$  jot down a couple of ideas of how to simplify this expression.

What happens when you...

$$\sqrt{5} \cdot \sqrt{5} = \sqrt{25} = 5$$

$$\sqrt{13} \cdot \sqrt{13} = \sqrt{169} = 13$$

$$\sqrt{11} \cdot \sqrt{11} = \sqrt{121} = 11$$

Simplify ...

$$\sqrt{\frac{4}{16}} = \frac{\sqrt{4}}{\sqrt{16}} = \frac{2}{4} = \frac{1}{2}$$

$$\sqrt{\frac{81}{100}} = \frac{\sqrt{81}}{\sqrt{100}} = \frac{9}{10}$$

$$\sqrt{\frac{36}{25}} = \frac{\sqrt{36}}{\sqrt{25}} = \frac{6}{5}$$

Please write one to two sentences summarizing how we simplified the above radicals.

you can split the square root to the numerator and denominator

$$\sqrt{\frac{7}{9}} = \frac{\sqrt{7}}{\sqrt{9}} = \frac{\sqrt{7}}{3}$$

$$\sqrt{\frac{11}{16}} = \frac{\sqrt{11}}{\sqrt{16}} = \frac{\sqrt{11}}{4}$$

$$\sqrt{\frac{24}{16}} = \frac{\sqrt{24}}{\sqrt{16}} = \frac{\sqrt{24}}{4} = \frac{2\sqrt{6}}{4} = \frac{\sqrt{6}}{2}$$

$$\begin{array}{l} \sqrt{24} \\ 6^{\wedge} 4 \\ 2^{\wedge} 3 \quad 2^{\wedge} 2 \end{array}$$

$$\sqrt{\frac{32}{25}} = \frac{\sqrt{32}}{\sqrt{25}} = \frac{\sqrt{32}}{5} = \frac{4\sqrt{2}}{5}$$

$$\sqrt{\frac{11}{2}} = \frac{\sqrt{11}}{\sqrt{2}} = \frac{\sqrt{11} \cdot \sqrt{2}}{\sqrt{2} \cdot \sqrt{2}} = \frac{\sqrt{22}}{2}$$

$$\sqrt{\frac{3}{5}} = \frac{\sqrt{3}}{\sqrt{5}} = \frac{\sqrt{3} \cdot \sqrt{5}}{\sqrt{5} \cdot \sqrt{5}} = \frac{\sqrt{15}}{5}$$

$$\begin{array}{l} \sqrt{32} \\ 2^{\wedge} 8 \\ 2^{\wedge} 4 \quad 2^{\wedge} 2 \\ 2^{\wedge} 2 \quad 2^{\wedge} 2 \end{array}$$

$$\sqrt{\frac{10}{7}} \cdot \frac{\sqrt{10}}{\sqrt{7}} \cdot \frac{\sqrt{7}}{\sqrt{7}} = \frac{\sqrt{70}}{7}$$

$$\sqrt{\frac{27}{36}} = \frac{\sqrt{27}}{\sqrt{36}} = \frac{\sqrt{27}}{6} \cdot \frac{3\sqrt{3}}{6} \cdot \frac{\sqrt{3}}{2} \sqrt{\frac{5}{15}} = \sqrt{\frac{1}{5}} = \frac{\sqrt{1}}{\sqrt{5}} \cdot \frac{\sqrt{5}}{\sqrt{5}} \cdot \frac{\sqrt{5}}{5}$$

$$\sqrt{27} \begin{matrix} \wedge \\ 9 \end{matrix} \begin{matrix} \wedge \\ 3 \end{matrix} \\ \begin{matrix} \wedge \\ 3 \end{matrix} \begin{matrix} \wedge \\ 3 \end{matrix}$$

$$\sqrt{\frac{3}{21}} = \sqrt{\frac{1}{7}} \cdot \frac{\sqrt{1}}{\sqrt{7}} \cdot \frac{\sqrt{7}}{\sqrt{7}} = \frac{\sqrt{7}}{7}$$

$$3\sqrt{\frac{4}{25}} = \frac{3 \cdot 2}{5} = \frac{6}{5}$$

$$3\sqrt{\frac{5}{2}} = \frac{3\sqrt{5}}{\sqrt{2}} \cdot \frac{\sqrt{2}}{\sqrt{2}} = \frac{3\sqrt{10}}{2}$$

$$\frac{3}{2}\sqrt{24} = \frac{3}{2} \cdot \frac{2\sqrt{6}}{1} = \frac{6\sqrt{6}}{2} = 3\sqrt{6} = \sqrt[4]{\frac{5}{9}} = \frac{-4\sqrt{5}}{3}$$
$$\begin{matrix} \wedge & \wedge \\ 6 & 4 \\ \wedge & \wedge \\ 2 & 3 & 2 & 2 \end{matrix}$$

$$\sqrt{\frac{1}{2}} \cdot \frac{\sqrt{1}}{\sqrt{2}} \cdot \frac{\sqrt{2}}{\sqrt{2}} = \frac{\sqrt{2}}{2}$$