

11.1 Simplifying Radicals

$$\sqrt{192}$$

$$\sqrt{4 \cdot 48}$$

$$\sqrt{4 \cdot 4 \cdot 12}$$

$$\sqrt{4 \cdot 4 \cdot 4 \cdot 3}$$

$2 \cdot 2 \cdot 2 \sqrt{3}$
 $8\sqrt{3}$

Sq. #'s

1 64

4 81

9 100

16 121

25 144

36 169

49 196

225

$$\sqrt{50}$$

$$\sqrt{25 \cdot 2}$$

$5\sqrt{2}$

$$\sqrt{18}$$

$$3\sqrt{2}$$

Multiplying Radicals

$$\sqrt{a} \cdot \sqrt{b} = \sqrt{ab}$$

Ex:

$$\sqrt{8} \cdot \sqrt{6} = \sqrt{48}$$

$$\begin{array}{l} \sqrt{16 \cdot 3} \\ 4\sqrt{3} \end{array}$$

$$\begin{array}{l} \sqrt{4 \cdot 12} = \sqrt{4 \cdot 4 \cdot 3} \\ 2 \cdot 2\sqrt{3} \end{array}$$

Variables

$$\sqrt{45a^5} \quad a = \sqrt{a^2} = \sqrt{a \cdot a}$$

$$\sqrt{9 \cdot 5 \cdot \boxed{a \cdot a} \cdot \boxed{a \cdot a} \cdot a}$$

$$3a \cdot a \sqrt{5a}$$

$$3a^2 \sqrt{5a}$$

$$\sqrt{60a^7}$$

$$\sqrt{4 \cdot \cancel{15} a^2 a^2 a^2 a}$$

$$2a^3 \sqrt{15a}$$

DIVISION

$$\sqrt{\frac{11}{49}} = \frac{\sqrt{11}}{\sqrt{49}} = \frac{\sqrt{11}}{7}$$

$$\sqrt{\frac{50}{200}} = \frac{\sqrt{50}}{\sqrt{200}} \quad \frac{5\sqrt{2}}{10\sqrt{2}}$$

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

Variables

$$\sqrt{\frac{25p^{\cancel{3}2}}{4\cancel{p}}} = \sqrt{\frac{25p^2}{4}} = \frac{\sqrt{25p^2}}{\sqrt{4}}$$

$$\frac{5p}{2}$$

$$\sqrt{\frac{75t^6}{16t^3}} = \sqrt{\frac{75t^3}{16}} = \frac{\sqrt{25 \cdot 3 t^2 \cdot t}}{4}$$

$$\frac{5t\sqrt{3t}}{4}$$

Pg 619 #1-23 odd
#31-43 odd