

# Simplify Radicals

$$\sqrt[4]{16} = 4, \quad \sqrt[5]{25} = 5, \quad \sqrt{-4} = \text{not a real root}$$

$$\sqrt{\frac{25}{16}} = \frac{\sqrt{25}}{\sqrt{16}} = \frac{5}{4}, \quad \sqrt{8} = 2\sqrt{2}$$

$$\sqrt{96} = 2 \cdot 2 \sqrt{6} = 4\sqrt{6}$$

multiply

2 48  
2 24  
2 12  
2 6  
2 3  
multiply

$$\sqrt{25a^4} = \sqrt{25} \cdot \sqrt{a^4} \quad \frac{4}{2} = 2$$

$$= \boxed{5a^2}$$

$$\sqrt{16a^5} = \sqrt{16} \cdot \sqrt{a^5}$$

$$= \boxed{4a^2\sqrt{a}}$$

$\textcircled{2}$  — take out the  $\sqrt{\quad}$   
 $2 \overline{)5}$   
 $4$   
 $\textcircled{1}$  — remain inside the  $\sqrt{\quad}$

$$\sqrt{\cancel{a}\cancel{a}\cancel{a}\cancel{a}a}$$

$$\sqrt{27a^3b} = \boxed{3a\sqrt{3ab}}$$

$$\textcircled{3} \overset{\wedge}{9}$$

$$\textcircled{3} \overset{\wedge}{3}$$