## **11.2: Simplifying Radicals**

Goals: \*Simplify radicals using the product property \*Multiply radicals \*Simplify radicals using the quotient property \*Rationalize the denominator

## **Radicals are simplest form when:**

1.

**Ex: (Not Simplified)** 

**Ex: (Simplified)** 

2.

3.

## **Properties of Radicals**

**Product Property:** 

**Quotient Property:** 

Simplify:

Ex:  $\sqrt{32}$ 

**Ex:**  $\sqrt{9x^2}$ 

Ex:  $\sqrt{24}$ 

**Ex:**  $\sqrt{25x^3}$ 

**Ex:**  $\sqrt{6} \cdot \sqrt{6}$ 

**Ex:**  $\sqrt{3} \cdot \sqrt{6}$ 

**Ex:**  $\sqrt{3x} \cdot 4\sqrt{x}$ 

**Ex:**  $\sqrt{7xy^2} \cdot 3\sqrt{x}$ 

**Ex:**  $\sqrt{7} \cdot \sqrt{7}$ 

**Ex:**  $3\sqrt{b} \cdot \sqrt{2b^3}$ 

**Ex:**  $2\sqrt{mn^2} \cdot \sqrt{5m^2}$ 

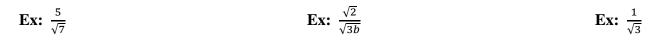
**Ex:**  $\sqrt{8y^7}$ 

Simplify:

**Ex:** 
$$\sqrt{\frac{16}{25}}$$
 **Ex:**  $\sqrt{\frac{13}{100}}$  **Ex:**  $\sqrt{\frac{1}{y^2}}$ 

**Ex:** 
$$\sqrt{\frac{5}{49}}$$
 **Ex:**  $\sqrt{\frac{11}{d^4}}$ 

## **Rationalizing the denominator:**





**Ex:**  $\frac{3}{\sqrt{2x}}$ 

**Ex:**  $\frac{7}{\sqrt{6}}$ 

**Ex:**  $\frac{\sqrt{3}}{\sqrt{5a}}$