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NOTES: Section 9.3 – Simplifying Radicals

Goals: #1 - I can simplify radical expressions. 

Homework: Section 9.3 Worksheet

Warm Up: Solve the equation or write *no real solution*. Write the solutions as integers, if possible. Otherwise, write them as radical expressions.

1. $m^2 = 1$
2. $3x^2 - 75 = 0$
3. $-12 + 5x^2 = 8$

Exploration #1: Work with a partner and answer the following questions.

1. Use your calcualtor to evaluate the following expressions.

   a. $\sqrt{50} =$

   b. $\sqrt{5} \cdot \sqrt{10} =$

   c. $\sqrt{100} =$

   d. $\sqrt{10} \cdot \sqrt{10} =$

2. What do you notice?

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Notes:

- _____

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

We use this property to _____ radical _____.

Example #1: Simplify the expression.

1. $\sqrt{12}$
2. $\sqrt{75}$
3. $\sqrt{48}$

You practice: Simplify the expression.

1. $\sqrt{32}$
2. $\sqrt{132}$
3. $\sqrt{63}$

Notes:

- _____

$$\sqrt{\frac{a}{b}} = \frac{\sqrt{a}}{\sqrt{b}}$$

We use this property to _____ radical _____.

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Example #2: Simplify the expression.

1. $\sqrt{\frac{4}{9}}$
2. $\sqrt{\frac{32}{50}}$
3. $5\sqrt{\frac{1}{25}}$

You practice: Simplify the expression.

1. $\sqrt{\frac{49}{36}}$
2. $3\sqrt{\frac{1}{9}}$
3. $-\sqrt{\frac{80}{45}}$

Notes:

When we get a _____ symbol in our _____,

we need to _____ the _____.

Example #3: Simplify the expression.

1. $\sqrt{\frac{1}{18}}$
2. $\sqrt{\frac{27}{15}}$
3. $\sqrt{\frac{5}{12}}$

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You practice: Simplify the expression.

1. $\sqrt{\frac{3}{5}}$
2. $\sqrt{\frac{1}{3}}$
3. $\sqrt{\frac{16}{10}}$

Review/more practice: Simplify the expression.

4. $\frac{1}{3}\sqrt{63}$
2. $-\sqrt{\frac{25}{16}}$
3. $-4\sqrt{\frac{1}{10}}$