

Name \_\_\_\_\_

Date \_\_\_\_\_

**Rewriting Radical and Exponential Expressions- Guided Lesson Explanation****Explanation#1**

Step 1) We can rewrite the expression using this form.

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

Step 2)  $\sqrt{\frac{16}{7}}$

$$\sqrt{\frac{4 \times 4}{7}}$$

$$\frac{\sqrt{4 \times 4}}{\sqrt{7}}$$

$$\frac{\sqrt{4^2}}{\sqrt{7}}$$

$$\frac{4}{\sqrt{7}}$$

To finish simplifying the expression, multiply by  $\frac{\sqrt{7}}{\sqrt{7}}$  to rationalize the denominator.

$$\frac{4}{\sqrt{7}} \times \frac{\sqrt{7}}{\sqrt{7}}$$

$$\frac{4\sqrt{7}}{(\sqrt{7})^2}$$

$$\frac{4\sqrt{7}}{7}$$

So the answer is  $\frac{4\sqrt{7}}{7}$



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### Explanation#2

Step 1) Let's remind ourselves what is being asked.

$$\sqrt{7} \times \sqrt{9}$$

Step 2) we have the multiplication property of square roots. Group perfect square factors

$$\sqrt{7} \times \sqrt{9}$$

$$\sqrt{7} \times \sqrt{3 \times 3}$$

$$\sqrt{7 \times 3 \times 3}$$

$$\sqrt{7 \times 3^2}$$

$$3\sqrt{7}$$

### Explanation#3

$-\sqrt{3} (14 - \sqrt{5})$  We can apply the distributive property here:

$$-\sqrt{3} \times 14 + \{(-\sqrt{3}) \times (-\sqrt{5})\}$$

$$-14\sqrt{3} + \sqrt{3 \times 5}$$

$$-14\sqrt{3} + \sqrt{15}$$

