REVIEW: Simplifying Square Roots

Name _____

Key Concept and Vocabulary

Product Property of Square Roots

Algebra: $\sqrt{xy} = \sqrt{x} \cdot \sqrt{y}$, where $x, y \geq 0$

Numbers: $\sqrt{12} = \sqrt{4 \cdot 3} = \sqrt{4} \cdot \sqrt{3} = 2\sqrt{3}$

Quotient Property of Square Roots

Algebra: $\sqrt{\frac{x}{y}} = \frac{\sqrt{x}}{\sqrt{y}}$, where $x \geq 0$ and $y > 0$

Numbers: $\sqrt{\frac{7}{9}} = \frac{\sqrt{7}}{\sqrt{9}} = \frac{\sqrt{7}}{3}$

Skill Examples

1. $\sqrt{18} = \sqrt{9 \cdot 2}$

$= \sqrt{9} \cdot \sqrt{2}$

$= 3\sqrt{2}$

2. $\sqrt{75} = \sqrt{25 \cdot 3}$

$= \sqrt{25} \cdot \sqrt{3}$

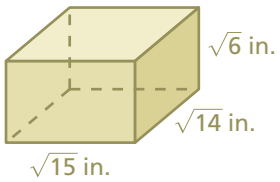
$= 5\sqrt{3}$

3. $\sqrt{\frac{5}{36}} = \frac{\sqrt{5}}{\sqrt{36}}$

$= \frac{\sqrt{5}}{6}$

Application Example

4. Find the volume of the rectangular prism.



$V = Bh$

$= (\sqrt{15})(\sqrt{14})(\sqrt{6})$

$= \sqrt{15 \cdot 14 \cdot 6}$

$= \sqrt{1260}$

$= \sqrt{36 \cdot 35}$

$= \sqrt{36} \cdot \sqrt{35}$

$= 6\sqrt{35}$

The volume of the rectangular prism is $6\sqrt{35}$ cubic inches.

PRACTICE MAKES *PURR*-FECT®

Check your answers at BigIdeasMath.com.

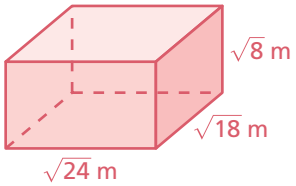
Simplify the expression.

5. $\sqrt{80} =$ _____ **6.** $\sqrt{216} =$ _____ **7.** $\sqrt{92} =$ _____ **8.** $\sqrt{245} =$ _____

9. $\sqrt{\frac{13}{25}} =$ _____ **10.** $\sqrt{\frac{29}{64}} =$ _____ **11.** $\sqrt{\frac{17}{100}} =$ _____ **12.** $\sqrt{\frac{40}{49}} =$ _____

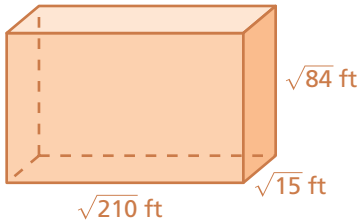
Find the volume of the rectangular prism.

13.



$V =$ _____

14.



$V =$ _____