

Algebra II
Auch

Section 1.3
Date:

Objectives

- Estimate square roots.
- Simplify, add, subtract, multiply and divide square roots.

Vocabulary

Radical symbol –
Radicand –
Principle Root –

Example #1

Estimate $\sqrt{34}$ to the nearest tenth.

Try it! Estimate $-\sqrt{55}$

Properties of Square Roots

For $a \geq 0$ and $b > 0$

	Words	Numbers	Algebra
Product Property of Square Roots			
Quotient Property of Square Roots			

Example #2 Simplifying Square Root Expressions

Simplify each expression

a) $-\sqrt{50}$

b) $\sqrt{\frac{49}{81}}$

c) $\sqrt{2} \cdot \sqrt{18}$

d) $\frac{\sqrt{96}}{\sqrt{6}}$

Try it!

a) $\sqrt{48}$

b) $\sqrt{\frac{36}{16}}$

c) $\sqrt{5} \cdot \sqrt{20}$

d) $\frac{\sqrt{147}}{\sqrt{3}}$

Example #3 Rationalizing the Denominator

Simplify each expression

a) $\frac{2\sqrt{2}}{\sqrt{3}}$

b) $\frac{\sqrt{8}}{\sqrt{18}}$

Try it!

a) $\frac{3\sqrt{5}}{\sqrt{7}}$

b) $\frac{5}{\sqrt{10}}$

Example #4 Adding and Subtracting Square Roots

Add or subtract.

a) $5\sqrt{2} + 3\sqrt{2}$

b) $5\sqrt{3} - \sqrt{12}$

Try it!

Add or subtract.

a) $3\sqrt{5} + 10\sqrt{5}$

b) $\sqrt{80} - 5\sqrt{5}$