

LESSON DIGITS 12-4

Goal: I will be able to <u>multiply and factor square roots.</u>	
Tool Bag Formulas, equations, Vocabulary, etc.	Here's How... Notes & Examples
Review	$\sqrt{36} = 6$ $\sqrt{6 \cdot 6} = \sqrt{6^2} = 6$ $\sqrt{81} = 9$ $\sqrt{9 \cdot 9} = \sqrt{9^2} = 9$ $\sqrt{144} = 12$ $\sqrt{12^2} = 12$
Square Root	$\sqrt{23^2} = 23$ $\sqrt{x^2} = x$ "Undoes" a square

You Try	a) $\sqrt{28}$	b) $\sqrt{80}$
	$\sqrt{4 \cdot 7}$ $\sqrt{4} \cdot \sqrt{7}$ $2\sqrt{7}$ $\sqrt{7} \cdot 2$	$\sqrt{8} \cdot 10$ $\sqrt{4 \cdot 2 \cdot 2 \cdot 5}$ $\sqrt{4 \cdot 2 \cdot 2 \cdot 5}$ $\sqrt{4} \cdot \sqrt{4} \cdot \sqrt{5}$ $2 \cdot 2 \cdot \sqrt{5}$ $4\sqrt{5}$

Simplifying Square Roots Example	$\sqrt{81} = \sqrt{9 \cdot 9} = \sqrt{9} \cdot \sqrt{9} = 3 \cdot 3 = 9$
	$\sqrt{16} = \sqrt{4 \cdot 4} = \sqrt{4} \cdot \sqrt{4} = 2 \cdot 2 = 4$
	$\sqrt{a \cdot b} = \sqrt{a} \cdot \sqrt{b}$
	$\sqrt{32} = \sqrt{16 \cdot 2} = \sqrt{16} \cdot \sqrt{2} = 4\sqrt{2}$ $\sqrt{250} = \sqrt{25 \cdot 10} = \sqrt{25} \cdot \sqrt{10} = 5\sqrt{10}$

Multiplication of Square Roots Example	$\sqrt{a} \cdot \sqrt{b} = \sqrt{ab}$
	$\sqrt{2} \cdot \sqrt{8} = \sqrt{2 \cdot 8} = \sqrt{16} = 4$
	$\sqrt{3} \cdot \sqrt{27} = \sqrt{3 \cdot 27} = \sqrt{81} = 9$
	$\sqrt{7} \cdot \sqrt{5} = \sqrt{7 \cdot 5} = \sqrt{35} \approx 5.9$