Algebra 1
Unit 9 Review Guide

Name:_____
Date:_____ Block:_____

Unit 9: Radicals & Exponents

What you need to know & be able to do	Things to remember	Examples	
1. Exponential Expressions	Multiply/Divide Coefficients Add/Subtract Exponents	a. $(3x^2y)^4$	b. $(-2x^3y^4)^2 \cdot x^2y^3x^3y^5$
		c. . $3mn^3 \cdot 6m^6n^7$	d. $\frac{45a^7b^3}{-5a^9b}$
		e. $\frac{2y^7x^3}{(2x^2)^4}$	f. $\left(\frac{2x^5y^4}{3yx^3}\right)^3$
2. Estimate Radicals	Determine what two perfect squares the radical is between.	a. Estimate $\sqrt{43}$ to the nearest tenth.	a. Estimate $\sqrt{71}$ to the nearest tenth.
3. Simplify radicals	-Break each number down into its prime factors and circle pairs of the same number (perfect squares) -Keep each factor without a buddy underneath the square root.	a. $\sqrt{20}$	b. $\sqrt{24x^2y^8}$
		c. $5\sqrt{12x^6y^5z^4}$	d. $-2\sqrt{10x^4y^2}$

4. Multiply radicals	-Multiply the outside numbers and variables -Multiply the inside numbers and variables -Simplify radical	a. $-4\sqrt{15}\cdot\sqrt{3}$	b. $\sqrt{2y^3}\cdot\sqrt{8y^3}$
		c. $\sqrt{18a^2}\cdot 4\sqrt{3a^3}$	d. $2\sqrt{6x^4}\cdot -7\sqrt{4x^2}$
5. Add and Subtract Radicals	-Distribute if necessary -Simplify each radical -Add or subtract like terms	a. $2\sqrt{6}-2\sqrt{54}$	b. $3\sqrt{12}+3\sqrt{3}$
		c. $-4\sqrt{6}(3+5\sqrt{2})$	d. $-3\sqrt{20}-4\sqrt{45}+8\sqrt{3}$