Cornell Notes	Topic/Objective: 4.1 Exponents	Name:
AVID		Class/Period: 4
		Date: 1/25/17

Essential Question: Recall Exponent Rules

Questions:	Notes:
	Laws of Exponents
	Exponents have a base and a power (index)
	$a^m \cdot a^n = a^{m+n}$
	$\frac{a^m}{a^n} = a^{m-n}$
	$(a^m)^n = a^{m \cdot n}$
	$a^{-n} = \frac{1}{a^n}$ or $\frac{1}{a^{-n}} = a^n$
	$a^0 = 1$ let $m=2$ let $n=2$ $\frac{a^m}{a^n} = \frac{a^2}{a^2} = a^{2-2} = a^0$
$\sqrt{x} = x^{\frac{1}{2}}$	
	$\sqrt[n]{a} = a^{\frac{1}{n}}$ Fractional powers give us roots
	$\sqrt[n]{a^m} = (\sqrt[n]{a})^m = (a^{\frac{1}{n}})^m = a^{\frac{1}{n} \cdot m} = a^{\frac{m}{n}}$
	Ex Evaluate $\left(\frac{1}{27}\right)^{\frac{4}{3}}$
	$\frac{(\sqrt[3]{1})^4}{(\sqrt[3]{27})^4} = \frac{(1)^4}{(3)^4} = \frac{1}{81} = 81^{-1}$
	Ex Simplify $\sqrt{\frac{x^{-2}y^2}{25x^4}}$
	① clean up inside $\sqrt{\frac{y^2}{25x^4x^2}}$
	$\sqrt{\frac{y^2}{25x^6}}$
	$\sqrt{\frac{1}{25}} \cdot \sqrt{\frac{y^2}{x^6}}$
	$\frac{1}{5} \cdot \left(\frac{y^2}{x^6}\right)^{\frac{1}{2}}$
	$\frac{1}{5} \cdot \frac{(y^2)^{\frac{1}{2}}}{(x^6)^{\frac{1}{2}}} = \frac{1}{5} \cdot \frac{y^{2 \cdot \frac{1}{2}}}{x^{6 \cdot \frac{1}{2}}}$
	$= \frac{1}{5} \cdot \frac{y}{x^3}$
	$= \frac{y}{5x^3}$

4A p. 104 #1-3
4B p. 106 #1,2
4C p. 107 #1,2

Questions:	Notes: