Algebra II Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Properties of Exponents & Rational Exponents Date\_\_\_\_\_\_\_\_\_\_\_\_\_\_Hour\_\_\_\_

Practice Worksheet

Simplify each expression. Assume all variables are positive. Show your work!!!

1. $(x^{\frac{2}{3}})^{-3}$ 2) $(3x^{\frac{2}{3}})^{-1}$ 3) $(x^{\frac{1}{2}}y^{-\frac{2}{3}})^{6}$

4) $(4xb^{\frac{1}{3}})^{3}$ 5) $\frac{12y^{-5}}{4y^{12}}$ 6) $(3a^{\frac{1}{2}}b^{\frac{1}{3}})^{2}$

7) $(2a^{\frac{1}{4}})^{3}$ 8) $(9x^{4}y^{-2})^{\frac{1}{2}}$ 9) $(27x^{12}y^{9})^{-\frac{1}{3}}$

Write each expression in exponent form.

10) $\sqrt{x^{3}}$ 11) $\sqrt[3]{m}$ 12) $\sqrt{5y}$

13) $\sqrt[3]{(2y^{2})}$ 14) $\sqrt[3]{2y^{2}}$ 15) $(\sqrt[4]{b})^{3}$

16) $\sqrt[4]{(6a^{4})}$ 17) $\sqrt[5]{(5ab)^{4}}$ 18) $\sqrt{-6}$

Review Properties of Exponents (Notes #1)

Simplify the following. Answers should have only positive exponetns.

19) (2x-3y5)4 20) $\frac{12a^{-7}}{2a^{-2}}$ 21) x4(2x)-3