

Math 0099
University of North Georgia
Summer 2015
Quiz #3

Name: Key Date: June 11, 2015

Simplify

$$1. \left(\frac{64}{125}\right)^{-\frac{2}{3}} = \frac{64^{-\frac{2}{3}}}{125^{-\frac{2}{3}}} = \frac{125^{\frac{2}{3}}}{64^{\frac{2}{3}}} = \left(\sqrt[3]{\frac{125}{64}}\right)^2 = \left(\frac{5}{4}\right)^2 = \boxed{\frac{25}{16}}$$

$$2. 8^{\frac{1}{3}} = \sqrt[3]{8} = \boxed{2}$$

$$3. \left(27^{-1} a^{-\frac{1}{2}} b^{\frac{1}{3}}\right)^{-\frac{1}{3}} = \left(\frac{b^{\frac{1}{3}}}{27 a^{\frac{1}{2}}}\right)^{-\frac{1}{3}} = \frac{\left(b^{\frac{1}{3}}\right)^{-\frac{1}{3}}}{27^{-\frac{1}{3}} \cdot \left(a^{\frac{1}{2}}\right)^{-\frac{1}{3}}}$$

$$27^{\frac{1}{3}} = \sqrt[3]{27} = 3$$

$$= \boxed{\frac{3 a^{\frac{1}{6}}}{b^{\frac{1}{9}}}}$$