

Intermediate Algebra
University of North Georgia
Fall 2015
Quiz #3

Name: Key Date: September 9, 2015

Simplify

$$1. \left(\frac{1}{32}\right)^{\frac{2}{5}} = \frac{1^{\frac{2}{5}}}{32^{\frac{2}{5}}} = \frac{1}{(32^{\frac{1}{5}})^2} = \frac{1}{(2)^2} = \boxed{\frac{1}{4}}$$

$$2. \left(\frac{2^{-\frac{1}{2}}x^{\frac{1}{3}}}{y^{-\frac{1}{2}}}\right)^{-3} = \frac{(2^{-\frac{1}{2}})^{-3} \cdot (x^{\frac{1}{3}})^{-3}}{(y^{-\frac{1}{2}})^{-3}} = \frac{2^{\frac{3}{2}} \cdot x^{-1}}{y^{\frac{3}{2}}} = \boxed{\frac{2^{\frac{3}{2}}}{y^{\frac{3}{2}}x}}$$

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

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

$$\frac{3^{\frac{1}{3}}}{3x^{\frac{1}{2}}y} \cdot \frac{36x^2z^2y^{\frac{2}{3}}}{1}$$

$$\frac{12x^{\frac{1}{2}}z^{\frac{1}{3}}z^2y^{\frac{2}{3}}}{x^{\frac{1}{2}}y}$$

$$\frac{12x^{\frac{1}{2}-\frac{1}{2}}z^{\frac{1}{3}+2}y^{\frac{2}{3}-1}}{1}$$

$$\frac{1}{1} - \frac{1}{2} = \frac{2-1}{2} = \frac{1}{2}$$

$$\frac{1}{3} + \frac{2}{1} = \frac{1+6}{3} = \frac{7}{3}$$

$$\frac{2}{3} - \frac{1}{1} = \frac{2-3}{3} = -\frac{1}{3}$$

$$\frac{12x^{\frac{1}{2}}z^{\frac{7}{3}}y^{-\frac{1}{3}}}{1}$$

→

$$\boxed{\frac{12x^{\frac{1}{2}}z^{\frac{7}{3}}}{y^{\frac{1}{3}}}}$$