Functions & Trig. Name _____
More Practice with Rational Exponents

1.) Write the expression using rational exponents: $\sqrt{x^3 y}$

(a) $x^{\frac{2}{3}} y^{\frac{1}{3}}$ (b) $x^{\frac{3}{2}} y^{\frac{1}{3}}$ (c) $x^{\frac{3}{2}} y^{\frac{1}{2}}$ (d) $(xy)^{\frac{3}{2}}$

2.) The expression $\sqrt[4]{x^2 y^5}$ is equivalent to

(a) $x^{\frac{1}{2}} y^{\frac{5}{4}}$ (b) $x^{\frac{1}{2}} y^{\frac{4}{5}}$ (c) $xy^{\frac{5}{2}}$ (d) $xy^{\frac{2}{5}}$

3.) Write the expression using rational exponents: $\sqrt[4]{xy^3}$

(a) $x^4 y^{\frac{4}{3}}$ (b) $x^{\frac{1}{4}} y^{\frac{3}{4}}$ (c) $x^{\frac{1}{4}} y^{\frac{4}{3}}$ (d) $x^4 y^{12}$

Evaluate the expression without using a calculator.

4.) $27^{\frac{2}{3}}$

5.) $64^{\frac{2}{3}}$

6.) $243^{\frac{1}{5}}$

7.) $16^{\frac{3}{2}}$

8.) $81^{\frac{3}{4}}$

9.) $9^{\frac{5}{2}}$