

Algebra 2  
Rational Exponents Practice

HW 42

Name: \_\_\_\_\_  
Period: \_\_\_\_\_

Rewrite in exponential form.

1.  $\sqrt{x}$       2.  $\sqrt[4]{x}$       3.  $\sqrt[3]{6}$       4.  $\sqrt[4]{x^7}$       5.  $\sqrt[6]{16^4}$       6.  $\sqrt[3]{x^3y^2}$

Rewrite in radical form.

7.  $x^{\frac{7}{4}}$       8.  $x^{\frac{4}{5}}$       9.  $8^{\frac{3}{4}}$       10.  $10^{\frac{2}{3}}$       11.  $(xy)^{\frac{5}{4}}$       12.  $4^{\frac{3}{7}}$

Solve for  $x$ . Write your answer in exact form. Then, find the answer rounded to 3 decimal places.

13.  $\sqrt[3]{x} = 5$       14.  $x^{\frac{1}{4}} = 200$       15.  $x^{\frac{1}{3}} = 6$       16.  $x^{\frac{1}{8}} = 4$       17.  $\sqrt[5]{x^4} = 7$

18.  $x^{\frac{5}{6}} = 8$       19.  $x^{\frac{4}{3}} = 5$       20.  $x^{\frac{7}{4}} = 15$       21.  $\sqrt[3]{x^2} = 10$

Simplify.

22.  $\frac{8^{\frac{2}{3}}x^{\frac{1}{4}}y^{-1}}{2x^4y^0}$

23.  $\frac{5x^{\frac{2}{3}}y^{\frac{1}{2}}}{y^0x}$

24.  $\left(\frac{a^{\frac{1}{4}}c^{\frac{1}{6}}}{c^{\frac{5}{6}}b^{\frac{3}{4}}a^{\frac{1}{2}}}\right)^{\frac{1}{2}}$