Algebra 2

Lesson 5.6 Worksheet

Name _____

Block _____ Date _____

Find all real roots. (Example #1 in notes)

1) Cube root of -8

2) Square root of -81

3) Forth root of 1296

4) Cube root of 0

Simplify each expression. Assume all variables are positive. (Example #2 in notes)

5) $\sqrt[3]{81x^5}$

6) $\sqrt[4]{\dfrac{x^8}{81}}$

7) $\sqrt[3]{40x}$

Write each expression in radical form, and simplify. (Example #3 in notes)

8) $64^{\frac{5}{6}}$

9) $27^{\frac{2}{3}}$

10) $(-8)^{\frac{4}{3}}$

Write each expression by using rational exponents. (Example #4 in notes)

11) $\sqrt[5]{51x^4}$

12) $\left(\sqrt{169}\right)^3$

13) $\left(\sqrt[7]{36}\right)^{14}$

Simplify each expression. (Example #5 in notes)

14) $4^{\frac{3}{2}} \cdot 4^{\frac{5}{2}}$

15) $\dfrac{27^{\frac{4}{3}}}{27^{\frac{2}{3}}}$

16) $\dfrac{\left(x^{-2}\right)^{-4}}{x^{-1} \cdot x^{\frac{4}{3}}}$

17) $\dfrac{\left(x^{\frac{3}{4}}\right)^{-\frac{5}{4}}}{xx^{\frac{4}{3}}}$

18) $\dfrac{n}{n^{-1}\cdot(n^2)^{\frac{3}{2}}}$

19) $\dfrac{\left(x^{\frac{1}{2}}\right)^{2}}{x^{\frac{3}{2}}\cdot x^{-\frac{2}{3}}}$