Math103 Intermediate Algebra – Spring 2008 – DLA – Test 4

Name_____

Each of the 19 questions is worth 5 points plus 1 point for each of 5 homework problems for a total of 100

Find the root if it is a real number.

1) $\sqrt[4]{\frac{625}{16}}$

Simplify the root.

2) – $\sqrt[3]{x^{15}}$

Simplify by first converting to rational exponents. Assume that all variables represent positive real numbers.

3) $\sqrt[4]{25u^{14}}$

Use the rules of exponents to simplify the expression. Write the answer with positive exponents. Assume that all variables represent positive real numbers.

4) $\dfrac{x^{1/2}}{x^{3/4} \cdot x^{-2}}$

Express the radical in simplified form.

5) $\sqrt[3]{432}$

Express the radical in simplified form. Assume that all variables represent positive real numbers.

6) $\sqrt[3]{\dfrac{y^{13}}{343}}$

Simplify. Assume that all variables represent positive real numbers.

7) $-4\sqrt{3} + 7\sqrt{27}$

8) $8\sqrt[5]{m^{11}p^7} - 5m^2p\sqrt[5]{mp^2}$

Multiply, then simplify the product. Assume that all variables represent positive real numbers.

9) $(5 - 2\sqrt{5})^2$

Simplify. Assume that all variables represent positive real numbers.

10) $\sqrt[3]{\frac{4}{5}}$

Rationalize the denominator. Assume that all variables represent positive real numbers and that the denominator is not zero.

11) $\dfrac{\sqrt{3}}{3\sqrt{2}-\sqrt{3}}$

Solve the equation.

12) $\sqrt{2k+1}=7$

Solve this equation.

13) $\sqrt{p^2-3p+18}=p+2$

Multiply or divide as indicated.

14) $\frac{\sqrt{-576}}{\sqrt{-9}}$

Add or subtract as indicated. Write your answer in the form a + bi.

15) [(1 + 2i) – (9 + 10i)] – (5 – 6i)

Use the quadratic formula to solve the equation. (All solutions are real numbers.)

16) $x^2 = 7 - 8x$

Use the quadratic formula to solve the equation.

17) $x^2 - \frac{4}{3}x = -\frac{7}{6}$

Identify the vertex of the given parabola.

18) $f(x) = -(x + 9)^2 - 8$

Sketch the graph of the parabola.

19) $y = (x + 3)^2 - 1$