Math103 Intermediate Algebra – Spring 2008 – DLA – PreTest 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) $\sqrt[4]{\frac{81}{625}}$

Simplify the root.

2) $\sqrt[3]{x^{27}}$

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

3) $\sqrt[4]{100s^{18}}$

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

4) $\dfrac{x^{1/2}}{x^{5/4} \cdot x^{-3}}$

Express the radical in simplified form.

5) $\sqrt[3]{864}$

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

6) $\sqrt[3]{\dfrac{y^{10}}{125}}$

Simplify. Assume that all variables represent positive real numbers.

7) $4\sqrt{7} + 5\sqrt{63}$

8) $9\sqrt[3]{m^7p^5} - 7m^2p\sqrt[3]{mp^2}$

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

9) $(3 - 5\sqrt{2})^2$

Simplify. Assume that all variables represent positive real numbers.

10) $\sqrt[3]{\frac{7}{3}}$

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

11) $\dfrac{\sqrt{7}}{7\sqrt{3} - \sqrt{7}}$

Solve the equation.

12) $\sqrt{2k + 1} = 13$

Solve this equation.

13) $\sqrt{p^2 - 2p + 49} = p + 3$

Multiply or divide as indicated.

14) $\frac{\sqrt{-144}}{\sqrt{-4}}$

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

15) [(4 + 6i) – (10 + 7i)] – (5 – 6i)

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

16) $x^2 = 3 - 4x$

Use the quadratic formula to solve the equation.

17) $x^2 - \frac{2}{5}x = -\frac{7}{10}$

Identify the vertex of the given parabola.

18) $f(x) = -(x + 1)^2 - 2$

Sketch the graph of the parabola.

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