Name:_____ TA:_____

Foundations of Math 10 LG 2 Ver A PART A – NON CALCULATOR

****CALCULATORS ARE <u>NOT</u> PERMITTED ON THIS PART OF THE TEST**

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Expectation #1: Apply the exponent laws to simplify expressions with rational exponents.

1. Simplify the following. Leave your answers with positive exponents. (1 mark each)

   a) $(x^2)(x^3)$

   b) $(x^4)^3$

   c) $\frac{(m^{-2})^3}{(m^2)^{-1}}$

   d) $(9x^2)^{-\frac{1}{2}}(x^2)$

Expectation #2: Represent and simplify irrational numbers.

2. Evaluate. (1 mark each)

   a) $8^{\frac{2}{3}}$

   b) $\left(25^{\frac{1}{2}}\right)\left(\frac{1}{5}\right)^{-1}$

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Expectation #3: Convert between powers with rational exponents and radicals.

3. Express $13^{\frac{5}{3}}$ as a radical. (1 mark)

Expectation #4: Convert between mixed radicals and entire radicals.

4. Express each mixed radical as an entire radical. (1 mark each)

   a) $5\sqrt{2}$ b) $2\sqrt[3]{3}$

5. Express each entire radical as an equivalent mixed radical (1 mark each)

   a) $\sqrt{48}$ b) $\sqrt[3]{40}$

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Name:_____ TA:_____

Foundations of Math 10 LG 2 Ver A PART B – CALCULATOR

****CALCULUATORS ARE PERMITTED ON THIS PART OF THE TEST**

Expectation #2: Represent and simplify irrational numbers.

6. Evaluate to 4 decimal places. (1 mark each)

a) $(7^{-0.3})^2$

b) $\left(\frac{(-3)}{5^{\frac{2}{3}}}\right)^{\frac{1}{3}}$

c) $\sqrt[3]{45}$

7. Order the set of numbers from least to greatest and then identify the irrational numbers (2 marks).

$2\frac{2}{3}$ $\sqrt[3]{9}$ $2.\overline{3}$ $2\sqrt{1.21}$

8. A bank offers a 1.2% interest rate per year on deposits. You decide that you will put $500 in the bank. This situation can be modeled with the equation $A = 500(1 + i)^n$ where *A* is the amount of money after the term, *i* is the interest rate as a decimal number and *n* is the number of years in the term deposit. How much money will you have in the bank after 5 years? (2 marks)

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9. A company produces sections of fencing. The number of fences produced is given by this formula: $n = 2.6\sqrt{h}$ where *n* is the number of fences produced and *h* is the hours worked. How many more fences will be produced by a crew who works 100 hours compared to a crew who works 60 hours? (2 marks)

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