Name:_____ TA:_____

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

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

/20

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) $(x)(x^6)$

   b) $(x^2)^7$

   c) $\frac{(m^{-2})^0}{(m^3)^{-3}}$

   d) $(8x^6)^{\frac{1}{3}}(x^{-3})$

Expectation #2: Represent and simplify irrational numbers.

2. Evaluate. (1 mark each)

   a) $-9^{\frac{1}{2}}$

   b) $(4^2)\left(\frac{2}{3}\right)^{-2}$

/6

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

3. Express $\sqrt[4]{22^7}$ as a power. (1 mark)

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

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

   a) $3\sqrt{4}$ b) $2\sqrt[3]{5}$

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

   a) $\sqrt{44}$ b) $\sqrt[3]{54}$

/5

Name:_____ **TA:**_____

Foundations of Math 10 LG 2 Ver B 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) $(3^{-1.2})^3$

b) $\left(\frac{\frac{2}{5}^3}{4}\right)^{\frac{1}{2}}$

c) $\sqrt[5]{23.4}$

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

$4\frac{2}{5}$ $2\sqrt[3]{8}$ $4.\overline{4}$ $2\sqrt{4.4}$

8. The number of ants in a colony doubles every 10 days. There currently are 25 ants in the colony. This situation can be modeled by the formula $P = 25(2)^{0.1d}$ where P represents the number of ants and d represents the number of days. How many ants will there be after 14 days? (2 marks)

/7

9. The elevation of a balloon is given by the formula $h = 10\sqrt{t}$ where *h* is the height above the ground in metres and *t* is time in seconds. How much higher is the balloon at 80 seconds than it is at 25 seconds? (2 marks)

/2