Name:_____ **TA:_____**

Foundations of Math 10 LG 1 Ver A **/20**

Calculators are **NOT** permitted on this test.

Expectation #1: Determine the square root and cube root of perfect squares and cubes.

1. Evaluate the following. (1 mark each)

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

   c) -2^4 d) $(-2)^3$

2. Give an example of a number that is a perfect square but not a perfect cube. (1 mark)

3. Determine the following roots. (1 mark each)

   a) $\sqrt{16}$ b) $\sqrt[3]{27}$

4. Farmer Joe fences a square field with an area of 64 m^2. What is the length of one side of the fence? (1 mark)

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Expectation #2: Apply the exponent laws to simplify expressions with integral exponents.

5. Simplify each expression. State your answer using positive exponents. (1 mark each)

   a) $3x^2y^{-1}$ b) $\frac{x^2}{x^5}$

6. Simplify each expression. State your answer using positive exponents. (2 marks each)

   a) $[(t)^4(t)^{-3}]^2$ b) $\left(\frac{2d^3}{d^{-3}}\right)^3$

7. Evaluate. (2 marks each)

   a) $\left(\frac{4^2}{2^4}\right)^6$ b) $\left(\frac{2}{2^3}\right)^{-1}$

8. The population of flies is currently 10 and is doubling every day. The relationship can be modeled by the equation $N = 10(2)^t$ where *N* is the number of flies and *t* is the time in days. How many flies will there be after 4 days? (2 marks)

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