Math 10 Foundations LG 1 Quiz B Answer Sheet

Instructions

1. Mark your quiz.
2. Complete the "How Did I Do?" sheet
3. Return this sheet to Mrs. Craig.
4. Bring your marked quiz and the "How Did I Do?" page to your teacher for a quick interview.

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

1. Evaluate the following. (1 mark each)

a) 3^2

$= 3 \times 3$

$= 9$

b) $\frac{1}{2^3}$ $= \frac{1}{2 \times 2 \times 2} = \frac{1}{8}$

c) -2^0

$= -1$

d) $(-2)^4$ $= (-2) \times (-2) \times (-2) \times (-2)$

$= 16$

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

EXAMPLES INCLUDE: 8, 27, 125

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

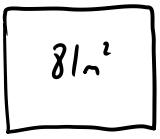
a) $\sqrt{25}$

$= 5$

b) $\sqrt[3]{8}$

$= 2$

4. Farmer Joe fences a square field with an area of 81 m^2. What is the length of one side of the fence? (1 mark)



$\sqrt{81} = 9$

SO LENGTH OF ONE SIDE = 9m

*DON'T FORGET UNITS!

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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) $3x^{-3}y^5$ $= \frac{3y^5}{x^3}$

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

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

a) $[2t^{-4}]^2$

$= 4t^{-8}$

$= \frac{4}{t^8}$

b) $[(xy^2)^{-2}]^{-3}$

$= [x^{-2}y^{-4}]^{-3}$

$= x^6y^{12}$

7. Evaluate. (2 marks each)

a) $\left(\frac{4^2}{4}\right)^2$

$= \left(\frac{4^2}{4^1}\right)^2$

$= (4^1)^2$

$= 4^2 = 16$

b) $[(2)(2)^2]^{-1}$

$= [2^{1+2}]^{-1}$

$= [2^3]^{-1}$

$= 2^{-3}$

$= \frac{1}{2^3} = \frac{1}{8}$

8. The population of frogs is currently 10 and is tripling every day. The relationship can be modeled by the equation $N = 10(3)^t$ where *N* is the number of flies and *t* is the time in days. How many flies will there be after 2 days? (2 marks)

$N = 10(3)^2$

$= 10(9)$

$= 90$

THERE WILL BE 90 FLIES.

* UNITS ARE IMPORTANT!

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