

STUDY GUIDE
MATH 101 TEST 2
Geometry B and Number Theory

This study guide consists of a list of topics to remind you of what we've covered since the last test, so that you do not forget to review any of these topics. Keep in mind that any material from lecture, videos, book, notes or homework is free game for your test! This study guide is not necessarily an exhaustive list of what your test may contain, nor will all of these items necessarily be on your test. However, if you are able to do problems relating to these topics you should do well on the test.

FRACTAL GEOMETRY

- Be able to draw 'stage 2' of a fractal given an initiator and generator.
- Be able to draw an initiator and generator of a fractal given 'stage 2.'
- Be able to find length or perimeter or area or volume of a given fractal.
- Be able to find the self-similarity dimension of a fractal.
- Be able to describe in your own words what self-similarity dimension tells us about a shape.
- Be able to list some applications of fractals.
- Be able to list the 5 characteristics shared by all fractals.

NUMBER THEORY

- Be able to count using Mayan numbers.
- Be able to translate back and forth between our number system and the Mayan system.
- Be able to multiply two numbers using the Egyptian method, doing all of your work in Egyptian numbers.
- Be able to count in other bases.
- Be able to add and subtract in other bases.
- Be able to translate numbers back and forth between base 10 and other bases.
- Be able to list the first 10 Fibonacci Numbers.
- Be able to use your calculator to find a given Fibonacci Number using the formula.
- Be able to identify numbers that are prime, composite, Mersenne Prime, perfect, abundant or deficient.
- Know and be able to use the relationship between Mersenne Primes and perfect numbers.