

Study Guide for MATH 106

How to study:

- Be sure that you have a good understanding of the mathematics we have covered. See below for a list of topics
- Read through the powerpoints and the worksheets with answers on Canvas
- Go to the interactive website under “Practice problems” in Canvas if you need a refresher
- Watch the videos on Canvas
- Continue reading our updates on Canvas about what to expect. The first step to studying is to make sure that you are proficient in the mathematics we’ve discussed.

What to expect:

You will do well if you have a good understanding of the mathematical topics and you come to the test with an open mind. We will be asking you to think conceptually, not necessarily be caught up in the numerical answers. We want to know that you can think mathematically and explain your reasoning. The test will be an opportunity for you to show us that you understand the mathematics and also the connections of mathematics to your everyday lives and your chosen field.

Test Topic Ideas

Mathematics Covered

- Geometry
 - Triangles (similar triangles, right triangles, angles, area, Pythagorean Theorem)
 - Radians versus degrees and how to convert between the two
 - Euclidean (flat) versus non-Euclidean (what happens to triangle angle measures on a sphere and saddle, parallel lines)
 - Circles (radius, diameter, circumference)
- Graphs
 - Creative ways to represent data
 - Scale, axes, labels
 - Log scale versus standard scale (population data)
 - Linear versus nonlinear patterns
 - What truths can you infer?
 - What questions does this raise?
- Surfaces
 - Mobius strips
 - Challenged perceptions of the number of sides of paper
 - Explore different possibility and come to conclusions about patterns
- Estimation
 - What is an order of magnitude?

- For what kinds of problems are estimates sufficient (over precise answers)
- Precision versus estimation
- Explain approach to conclusions
- Measurement and units
- Axioms
 - Understand their role in mathematics
 - Recognize the importance of logic