University Math Center Tutor Exams:

In order to apply for a tutoring position in the University Math Center, a student must take two math proficiency exams. The first exam contains algebraic/trigonometric topics and the second exam is a review of calculus concepts.

Exams are not timed and they should not be taken on the same day. Typically applicants take about 1.5-2 hours per exam, please plan accordingly. Books, notes, and calculators are NOT allowed on either exam. Students are encouraged to show as much work as possible on both exams: partial credit is awarded for correct work.

Below is a study guide. There is a copy of the reference texts in the Math Center Lab. You use these books to study but they cannot leave the room.

Review for Algebra/Pre-Calculus Portion of Tutor Exam


- **Algebra Rules**: exponents, square roots, logarithms, absolute values, fractions, order of operations, properties, domain, factoring, quadratic formula, Pythagorean Theorem
- **Equations and Inequalities involving**: polynomials, absolute value, rational, trigonometric, exponential and logarithm functions, systems of equations, solution sets
- **Graphing Functions**: circles, polynomials, absolute value, rational, trigonometric, exponential and logarithm functions
- **Setting up equations from information given in word problems**

Review for Calculus Portion of Tutor Exam

Reference Text: *Single Variable Calculus*, 3rd edition, James Stewart

- **Limits**: one-sided, two-sided, infinite, continuity, holes, asymptotes
- **Basic Derivatives**: polynomials, trigonometric, exponential and logarithm functions
- **Derivative Rules**: product, quotient, chain, implicit differentiation
- **Interpreting derivatives**: relative and global maxima and minima, inflection points
- **Basic Integrals**: definite and indefinite, involving polynomials, trigonometric and exponential functions
- **Integration Rules**: substitution, integration by parts