



**MIDWESTERN**  
STATE UNIVERSITY

## **MATH PROFICIENCY EXAMS**

(COLLEGE ALGEBRA, TRIGONOMETRY, PRE-CALCULUS, CALCULUS)

Students who have assessment scores high enough to be exempt from any developmental math classes are eligible to begin with College Algebra or Pre-calculus. The Math Department strongly recommends that a student who begins with Pre-calculus has had a fourth year of high school mathematics that includes a semester of trigonometry.

Math proficiency exams are for students who wish to take higher level math classes. Students are not allowed to take a proficiency exam for any course in which he/she has had college level instruction.

Testing dates and times will be determined by the Math Department. Please call 940-397-4411 for more information.

Students need to first **pay at the Business office** then **bring the receipt and picture ID** to the exam.

Cost of exam \$35

The Calculus Proficiency exam does not allow calculators. For the College Algebra, Trig, and Pre-Calculus exams a graphing calculator is required.

Note: Other option includes taking **CLEP exams** to receive college credit for College Algebra, Precalculus, or Calculus I.

These exams are more expensive than the math proficiency exams, but there are review materials that can be purchased for as little as \$10 to help prepare for the exams. These review materials would most likely help the student prepare for math proficiency exams as well.

Information about different CLEP exams and corresponding study materials can be found at <http://www.collegeboard.com/student/testing/clep/exams.html> and from pages accessed via links from this page.

# MATH PROFICIENCY EXAM TOPICS

If a student feels that his/her algebra background is good, but has not had much trigonometry, the student should take the College Algebra Proficiency exam and upon passing that exam, take Trigonometry.

Any student wishing to begin in Calculus I must either pass the College Algebra and Trigonometry proficiency exams, or pass the Precalculus proficiency exam.

## College Algebra Proficiency Exam Topics

### **Graphing Calculator required**

1. Slope, Equation of a line
2. Solve Equations
3. Graphing
4. Simplifying Algebraic Expressions
5. Polynomial Division
6. Domain
7. Inequalities
8. Applications
9. Logarithms
10. Exponential Functions
11. Piecewise – Defined Functions
12. Systems of Equations
13. Composition of Functions
14. Variation
15. Increasing, Decreasing Functions

## Trigonometry Proficiency Exam Topics

### **Graphing Calculator required**

1. Radian and Degree Measure
2. Compute Values for  $\sin \theta$ ,  $\cos \theta$ ,  $\tan \theta$
3. Special Angles ( $30^\circ$ ,  $45^\circ$ ,  $60^\circ$ )
4. Right Triangles
5. Trig. Identities
6. Trig. Equations
7. Graphs
8. Inverse Trig. Functions
9. Simplifying Expressions
10. Law of Cosines
11. Law of Sines
12. Dot Product of Vectors
13. Vector Projections
14. Complex Numbers

## Pre-Calculus Proficiency Exam Topics

### **Graphing Calculator required**

1. Logarithms
2. Simplify Algebraic Expressions
3. Evaluate Functions
4. Piecewise-Defined Functions
5. Absolute Value
6. Graphing
7. Solve Equations
8. Inequalities
9. Composition of Functions
10. Radian and Degree Measure
11. Find Values for  $\sin \theta$ ,  $\cos \theta$ ,  $\tan \theta$
12. Right Triangle Trig.
13. Special Angles
14. Trig. Identities
15. Trig. Equations
16. Inverse Trig. Functions
17. Simplify Trig. Expressions
18. Law of Sines
19. Law of Cosines

## Calculus Proficiency Exam Topics

### **No Calculator allowed**

1. Distance Formula
2. Derivatives
3. Basic Integration
4. Tangents to a curve
5. Eq. of a Line
6. Area
7. Limits
8. First & Second Derivative Tests
9. Chain Rule
10. Polar Coordinates
11. Applications
12. Differentials
13. Continuity
14. Max/Min
15. Asymptotes
16. Graphs