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Michigan's College Algebra/Preparation for Calculus Pathway
Recommended Learning Outcomes

Description:

These outcomes are intended to prepare students to enter college-level calculus and can be met either in a two-course sequence (typically college algebra and trigonometry) or in a single precalculus course.

Students in programs not requiring calculus may also be served by completing a course in either the quantitative reasoning or introductory statistics pathway.

Skill Level:

To be successful in a college algebra or precalculus course, students will be expected to apply advanced algebra skills similar to those taught in high school algebra II in the Michigan Merit Curriculum or in intermediate algebra. Institutions should establish their own guidelines for determining if a student can succeed in a one-semester precalculus course or should be placed into a two-course college algebra/trigonometry sequence to prepare for calculus.

Outcomes:

- Demonstrate knowledge of functions, including absolute values, polynomials (including polynomials of degree greater than 2 and the fundamental theorem of algebra), rational functions, logarithms, exponential functions, and inverse functions.
- Apply algebraic techniques in solving linear, quadratic, logarithmic, and exponential equations.
- Analyze equations of circles and properties of circles such as angle measure in both radians and degrees.
- Evaluate cosine, sine, and tangent for common angles (in all quadrants).
- Sketch trigonometric functions and state their domains.
- Recall and apply basic trigonometric identities such as the double angle, half-angle, and addition formulas.
- Graph functions by transformation rather than by plotting points.
- Topics such as sequences and series may also be included.