

RCS Mathematics Exam for Credit - Precalculus Syllabus

No calculators are allowed for this exam

Units of Study

Quarter 1:

- Function Families: transformations, composite functions, inverses
- Polynomial and Rational Functions: finding zeros using division, complex numbers, non-linear inequalities

Quarter 2:

- Exponential and Logarithmic Functions:
- Trigonometry: unit circle, graphs, inverses, solving equations, proving identities, sum/difference formulas

Quarter 3:

- Trigonometry: Law of Sines and Law of Cosines (including the ambiguous case of SSA)
- Systems of Equations: linear and non-linear
- Partial Fractions: decomposition
- Sequences and Series
- Induction
- Probability: Permutations, combinations, Binomial Theorem, and Independent events
- Binomial Theorem
- Vectors

Quarter 4:

- Matrices
- Conic Sections
- Polar Graphing
- Limits
- Introduction of Calculus: definition of derivative, summations

Resources

- ❖ Precalculus with Limits, 2e; Larson; Cengage (2011)
- ❖ https://www.michigan.gov/documents/mde/K-12_MI_Math_Standards_REV_470033_7.pdf
- ❖ http://www.corestandards.org/assets/CCSSI_Mathematics_Appendix_A.pdf