**High School Math Course Name \_\_Math III\_\_\_\_\_\_\_   
Standards Division Document 2017-2018 (no changes from 2016-2017)**

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| **WEEKS 1 - 6** | | **WEEKS 7-12** | | **WEEKS 13 - 18** | |
|  | Review Topics | Standards | LOGARITHMS & EXPONENTIAL Functions |  | GEOMETRY: CIRCLES (CONT) |
| M1-A-CED.4  M2-F-IF.8a  M2-A-APR.1  M2-A-SSE.3  M2-N-CN.7  M2-N-CN.1  M2-A-REI.4a, 4b | Literal Equations  Adding, Subtracting, and Multiplying  polynomial expressions  Factoring (including cubes)  Solving Quadratic Equations (including  complex roots) | A-SSE 1a, 1b  A-SSE.2, 3c  A-CED.1, 2  A-REI.1  F-IF.7  F-BF.1a  F-LE.4 | Exponential functions & graphs (key features)  Write equation of the exponential function based on graph.  Solving exponential and logarithmic equations  Common Log, Natural log  Applications of log & exponential functions | G-C.2 | Angles: inscribed, circumscribed, central, sectors  Segments: Chords, tangents, radii, diameter, secants |
| Standards | Polynomial Functions | Standards | Advanced Function Topics | Standards | GEOMETRY: PROOFS |
| A-APR.2, 3, 6  A-CED. 1, 2  F-IF.4, 7, 9  F-BF.1, 1a, 1b  A-SSE.1, 1a, 1b  N-CN.9 | Long division & synthetic division of polynomials  Remainder & Factor Theorem  Relationship btwn zeros, factors, and graph  Create function based on graph or table  Fundamental Theorem  Graphs of Polynomials (interpret key features)  Transformations of polynomial functions | A-SSE.1a, 1b  A-CED.1, 2, 3  A-REI.11  F-IF.2, 7, 9  F-BF.1a, 1b, 3, 4a, 4b, 4c  F-LE.3 | Function Notation  Operations of Functions  Composition of functions  Inverse Functions  Piece-Wise Functions  Absolute Value Functions  Creating equations/inequalities and Systems  End behavior to show which function goes to infinity the fastest | G-C0.10, 11, 14 | Properties of the center of triangles (centroid, incenter, and cicumcenter).  Parallelogram proofs: sides, angles, diagonals, rectangles. |
| Standards | Rational and Radical Functions | Standards | TRIGONOMETRY | Standards | GEOMETRY: VOLUME |
| A-SSE.1, 1a, 1b  A-SSE.2  A-APR. 7  A-REI.1, 2, 11  A-CED1, 2 | Rules of Rational Exponents  Operations with rational expressions  Solving rational/radical equation & inequalities(discuss extraneous solutions)  Graphing Rational Functions (interpret key features – asymptotes and discontinuity) | F-IF.1, 4, 7  F-BF.3  F-TF.1, 2, 5 | Graphing & translating sin & cos functions (amplitude, frequency, and midline)  Modeling periodic phenomena  Unit circle (student must generate)  Convert from radians to degrees & vise versa | G-GMD.3, 4  G-MG.1 | Volume formulas for – prisms, cylinders, pyramids, cones, and spheres  Identify shapes of 2-D cross-sections of 3-D objects  Model Geometric Concepts for – shapes, properties, formulas, density, optimization, and real-life objects. |
|  |  |  | GEOMETRY: CIRCLES | Standards | STATS & PROBABILITY |
|  |  | G-C.5  G-GPE.1 | Arc Length, Area of a sector – using degrees and radians  Equation of a circle (Complete the square to find center and radius) | S-IC.1, 3, 4, 5, 6 | Sample mean & sample proportion to estimate population (inference)  Purpose and differences between surveys, experiments, and observational studies  Margin of Error  Evaluate articles and websites – graphs and design of study |
| A.CED.3 is used throughout the course. | | | | | |

\*For the Math 3 standards & unpacking documents: <http://maccss.ncdpi.wikispaces.net/HS+Standards>