**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.4M2-F-IF.8aM2-A-APR.1M2-A-SSE.3M2-N-CN.7M2-N-CN.1M2-A-REI.4a, 4b | Literal EquationsAdding, Subtracting, and Multiplying polynomial expressionsFactoring (including cubes)Solving Quadratic Equations (including complex roots) | A-SSE 1a, 1bA-SSE.2, 3c A-CED.1, 2A-REI.1F-IF.7F-BF.1aF-LE.4 | Exponential functions & graphs (key features) Write equation of the exponential function based on graph.Solving exponential and logarithmic equationsCommon Log, Natural log Applications of log & exponential functions | G-C.2 | Angles: inscribed, circumscribed, central, sectorsSegments: Chords, tangents, radii, diameter, secants |
| Standards | Polynomial Functions | Standards | Advanced Function Topics | Standards | GEOMETRY: PROOFS |
| A-APR.2, 3, 6A-CED. 1, 2F-IF.4, 7, 9F-BF.1, 1a, 1b A-SSE.1, 1a, 1bN-CN.9  | Long division & synthetic division of polynomialsRemainder & Factor TheoremRelationship btwn zeros, factors, and graphCreate function based on graph or tableFundamental Theorem Graphs of Polynomials (interpret key features)Transformations of polynomial functions | A-SSE.1a, 1bA-CED.1, 2, 3A-REI.11F-IF.2, 7, 9F-BF.1a, 1b, 3, 4a, 4b, 4cF-LE.3 | Function NotationOperations of FunctionsComposition of functions Inverse FunctionsPiece-Wise FunctionsAbsolute Value FunctionsCreating 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, 1bA-SSE.2 A-APR. 7A-REI.1, 2, 11 A-CED1, 2  | Rules of Rational ExponentsOperations with rational expressions Solving rational/radical equation & inequalities(discuss extraneous solutions)Graphing Rational Functions (interpret key features – asymptotes and discontinuity) | F-IF.1, 4, 7F-BF.3F-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, 4G-MG.1 | Volume formulas for – prisms, cylinders, pyramids, cones, and spheresIdentify shapes of 2-D cross-sections of 3-D objectsModel Geometric Concepts for – shapes, properties, formulas, density, optimization, and real-life objects.  |
|  |  |  | GEOMETRY: CIRCLES | Standards | STATS & PROBABILITY |
|  |  | G-C.5G-GPE.1 | Arc Length, Area of a sector – using degrees and radiansEquation 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 studiesMargin of ErrorEvaluate 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](http://maccss.ncdpi.wikispaces.net/HS%2BStandards)