

MEET 4

4A Algebraic Manipulation

- Factoring (including $x^3 + y^3$, $x^3 - y^3$)
- Sums, products, quotients of rational expressions
- Solving equations (including radical equations) involving these skills, but ultimately solvable by factoring or the quadratic formula (but no complex roots)
- Rational exponents
- Simplifying radical expressions
- Function notation and variational dependencies

4B Circular figures and solids

- Central, inscribed, tangential, and exterior angles
- Power of a point (chords, secants, tangents)
- Interior and exterior tangents of two circles
- Intercepted arcs
- Area of circles, sectors, circular segments
- Cylinders, cones, & spheres (including volume and surface area)

4C Miscellaneous Topics

- Sequences: patterns and recursion formulas, arithmetic and geometric sequences
- Series: partial sums, formulas for $1+2+\dots+n$, $1^2+2^2+\dots+n^2$, $1^3+2^3+\dots+n^3$
- Function notation; factorial notation and **Binomial Theorem**

4D Analytic Geometry of the Conic Sections

- Using the standard forms of equations of the conic sections
- Graphs, including the location of foci, directrices, and asymptotes
- Use of properties of conics to solve applied problems, including max-min for parabolas