Number Operations: Geometry and More Advanced Equations

Week 1: Angles

- Angles in triangles
- Angles in other 2D shapes

Week 2: Pythagorean Theorem

- Pythagorean Theorem
- Pythagorean Theorem in isosceles triangles

https://www.youtube.com/watch?v=37PX8DV b9Y

Week 3: Volume

- Volume of Cylinders
- Volume of Spheres
- Volume of Cones

Week 4: Polynomials Part 1

- Adding and subtracting polynomials
- Divide polynomials by a monomial

Week 5: Polynomials Part 2

• Binomial Theorem/ Pascal's Triangle

https://www.youtube.com/watch?v=iPwrDWQ7hPc https://www.youtube.com/watch?v=7xzsXGnadLY

Week 6: Solving Equations by Graphing

- Learn what represents a solution graphically
- Learn to rewrite an equation as a system of two equations, then graph both equations to find the solution

Week 7: Complex numbers

- Add, subtract, multiply, and divide complex numbers
- Complex plane
- Distance between complex numbers

https://www.youtube.com/watch?v=SP-YJe7Vldo https://www.youtube.com/watch?v=fPtyZKuDUV4

Week 8: Composite Functions

- Solving composition of two functions (f(g(x)))
- Understanding inverses as composite functions

https://www.youtube.com/watch?v=S4AEZEITPDo

Week 9: Inverse function

- Determine if a function has an inverse, learn how to make it invertible if not already (by restricting domain)
- Algebraically find inverse of a function
- Understand inverse functions graphically

Week 10: Intro to Vectors

- Magnitude of vectors
- Components of vectors
- Position of vectors in plane

Week 11: Intro to Trigonometry

- SOH-CAH-TOA
- Inverse trig
- Graphs of trig functions

Week 12: Wrap up and Review

Citations:

Khan Academy

 $\underline{https://www.khanacademy.org/math/cc-eighth-grade-math}$