# Math 7 (2 of 2) Honors

## Course Description:

Math 7 Honors (2 of 2) explores subtracting and dividing rational numbers by using different methods to perform four operations. Topics include: interpreting proportional relationships and equivalent expressions, writing and solving linear equations and inequalities to solve real-world problems, comparing two data sets of random samples using center values and variability measures to make conclusions about populations. Geometry topics include solving problems that involve the area, surface area, volume and cross sections of two- or three-dimensional objects.

## Course Objectives:

- Simplify, solve, and interpret expressions, equations, and word problems that involve operations with rational numbers.
- Rewrite expressions in equivalent forms using properties of numbers and operations.
- Solve problems with proportional relationships.
- Write and solve linear equations and inequalities that represent situations involving rational numbers.
- Find, interpret, and compare probabilities of simple and compound events.
- Choose and design probability simulations to determine frequencies and probabilities of events.
- Compare data sets using visual displays and calculations of center, variability, and spread.
- Solve problems that involve areas, surface areas, and volumes of polygons, right prisms, and composite figures.CO9.
- Identify and describe cross sections of three-dimensional figures.

## Required Materials:

In course.

## Course Overview:

### Unit 1: The Number System

- Learn (Lessons 1-5)
    - Key Terms
    - Text and Videos: Difference of Rational Numbers; Strategies for Addition and Subtraction; Distance on the Number Line; Quotients of Rational Numbers; Strategies for Multiplication and Division
    - Step-by-Step Example Problem
    - Workbook
- Discussion (Lessons 1, 4, and 5)
- Checkpoint (Lessons 1-4)
- Unit 1 Exam (Lesson 5)

## Unit 2: Ratios and Proportions

- Learn (Lessons 6-10)
    - Key Terms
    - Text and Videos: Proportional Relationships in Graphs; Proportional Relationships in Tables and Diagrams; Proportional Relationships in Verbal Descriptions; Percent Calculations; Percent Applications
    - Step-by-Step Example Problem
    - Workbook
- Discussion (Lessons 7, 8, and 10)
- Checkpoint (Lessons 6-9)
- Unit 2 Exam (Lesson 10)

## Unit 3: Expressions and Equations

- Learn (Lessons 11-15)
    - Key Terms
    - Text and Videos: Equivalent Expressions; Solve Percent Problems Using Equations; Solve Problems Involving Rational Numbers; Write and Solve Inequalities; Graph and Interpret Inequalities
    - Step-by-Step Example Problem
    - Workbook
- Discussion (Lessons 11, 13, and 14)
- Checkpoint (Lessons 11-14)
- Unit 3 Exam (Lesson 15)

## Unit 4: Probability

- Learn (Lessons 16-20)
    - Key Terms
    - Text and Videos: Probabilities of Simple Events; Probabilities of Compound Events; Use Lists and Tables for Compound Probabilities; Use Tree Diagrams for Compound Probabilities; Use Simulations for Compound Events
    - Step-by-Step Example Problem
    - Workbook
- Discussion (Lessons 18, 19, and 20)

- Checkpoint (Lessons 16-19)
- Unit 4 Exam (Lesson 20)

## Unit 5: Statistics

- Learn (Lessons 21-25)
    - Key Terms
    - Text and Videos: Compare Data Using Tables; Compare Data Using Dot Plots; Compare Means Using Dot Plots; Compare Data Using Box Plots; Compare Medians Using Box Plots
    - Step-by-Step Example Problem
    - Workbook
- Discussion (Lessons 21, 23, and 25)
- Checkpoint (Lessons 21-24)
- Unit 5 Exam (Lesson 25)

## Unit 6: Geometry

- Learn (Lessons 26-29)
    - Key Terms
    - Text and Videos: Area of Polygons; Surface Area of Three-Dimensional Figures; Volume of Three-Dimensional Figures; Cross Sections
    - Step-by-Step Example Problem
    - Workbook
- Unit 1-Unit 6 Reviews (Lesson 30)
- Discussion (Lessons 27, 28, 29, and 30)
- Checkpoint (Lessons 26-28)
- Unit 6 Exam (Lesson 29)
- Course Final Exam (Lesson 30)
- Course Summary (Lesson 30)