Geometry Sem 2

1. Right Triangle Relationships and Trigonometry
   1. Triangle Classification Theorems
      1. Instruction
         1. How can the side lengths of a triangle be used to classify it?
      2. Assignment
         1. Practice classifying triangles with known side lengths.
      3. Quiz
   2. Special Right Triangles
      1. Instruction
         1. Why are 45°-45°-90° and 30°-60°-90° triangles called "special" right triangles?
      2. Assignment
         1. Practice with special right triangles.
      3. Quiz
   3. Trigonometric Ratios
      1. Instruction
         1. What is a trigonometric ratio?
      2. Assignment
         1. Practice writing trigonometric ratios.
      3. Quiz
   4. Solving for Side Lengths of Right Triangles
      1. Instruction
         1. How can trigonometric ratios be used to solve for unknown side lengths of right triangles?
      2. Assignment
         1. Practice using trigonometric ratios to solve for missing lengths.
      3. Quiz
   5. Solving for Angle Measures of Right Triangles
      1. Instruction
         1. How can trigonometric ratios be used to solve for unknown angle measures of right triangles?
      2. Assignment
         1. Practice solving for angle measures of right triangles.
      3. Quiz
   6. Law of Sines
      1. Instruction
         1. How is the law of sines used to solve for unknown measures in triangles?
      2. Assignment
         1. Practice applying the law of sines.
      3. Quiz
   7. Law of Cosines
      1. Instruction
         1. How is the law of cosines used to solve for unknown measures in triangles?
      2. Assignment
         1. Practice using the law of cosines.
      3. Quiz
   8. Area and Perimeter of Triangles
      1. Instruction
         1. What are alternative methods of calculating the area of triangles?
      2. Assignment
         1. Practice calculating the area of a triangle.
      3. Quiz
   9. **Unit Test - (Must be taken in Person)**
      1. Unit Test Review
2. Quadrilaterals and Coordinate Algebra
   1. Classifying Quadrilaterals
      1. Instruction
         1. How are different quadrilaterals defined and related?
      2. Assignment
         1. Practice using properties and definitions of quadrilaterals.
      3. Quiz
   2. Parallelograms
      1. Instruction
         1. What properties do all parallelograms possess?
      2. Assignment
         1. Practice with parallelogram theorems.
      3. Quiz
   3. Proving a Quadrilateral Is a Parallelogram
      1. Instruction
         1. How can you prove that a quadrilateral is a parallelogram?
      2. Assignment
         1. Practice proving that a quadrilateral is a parallelogram.
      3. Quiz
   4. Special Parallelograms
      1. Instruction
         1. What special properties do rectangles, squares, and rhombi have?
      2. Assignment
         1. Practice analyzing the properties of special parallelograms and using them to solve problems.
      3. Quiz
   5. Trapezoids and Kites
      1. Instruction
         1. What are the properties of special quadrilaterals that are not parallelograms?
      2. Assignment
         1. Practice solving problems involving trapezoids and kites.
      3. Quiz
   6. Figures in the Coordinate Plane
      1. Instruction
         1. How can coordinate algebra be used to verify or prove geometric properties?
      2. Assignment
         1. Practice using coordinate algebra to solve problems.
      3. Quiz
   7. **Unit Test - (Must be taken in Person)**
      1. Unit Test Review
3. Circles
   1. Introduction to Circles
      1. Instruction
         1. How are circles and their related geometric figures defined?
      2. Assignment
         1. Practice describing geometric figures related to circles and finding arc measures of circles.
      3. Quiz
   2. Central Angles
      1. Instruction
         1. How are the measures of central angles, chords, and arcs related?
      2. Assignment
         1. Practice applying theorems involving central angles, chords, arcs, tangents, and radii.
      3. Quiz
   3. Inscribed Angles
      1. Instruction
         1. How is the measure of an inscribed angle (or one formed by a chord and a tangent) and its intercepted arc related?
      2. Assignment
         1. Practice with inscribed angle theorems and corollaries and the angle formed by a tangent and chord theorem.
      3. Quiz
   4. Secants, Tangents, and Angles
      1. Instruction
         1. How do you find the measures of angles with a vertex inside or outside a circle?
      2. Assignment
         1. Practice with measures involving angles and arcs formed by intersecting chords, secants, and tangents.
      3. Quiz
   5. Special Segments
      1. Instruction
         1. What relationships are there between the lengths of segments that intersect a circle?
      2. Assignment
         1. Practice analyzing segments created inside and outside circles.
      3. Quiz
   6. Circumference and Arc Length
      1. Instruction
         1. How are arc length and radius measure related?
      2. Assignment
         1. Practice with circumference and arc length.
      3. Quiz
   7. Area of a Circle and a Sector
      1. Instruction
         1. How can you find the area of a sector of a circle?
      2. Assignment
         1. Practice solving problems with circle and sector area.
      3. Quiz
   8. Angle Relationships
      1. Instruction
         1. What are the relationships between inscribed, central, and circumscribed angles of a circle?
      2. Assignment
         1. Practice relating inscribed, central, and circumscribed angles of a circle.
      3. Quiz
   9. Performance Task: Circle Constructions
      1. Instruction
         1. How do you perform and justify constructions related to circles?
      2. Preparing for Your Performance Task
         1. Prepare to perform and justify constructions in a Performance Task.
   10. Equation of a Circle
       1. Instruction
          1. How can a circle be represented algebraically?
       2. Assignment
          1. Practice working with equations of circles.
       3. Quiz
   11. Parabolas
       1. Instruction
          1. How can a parabola be defined using its relation to a point and a line?
       2. Assignment
          1. Practice using the focus and directrix to define a parabola.
       3. Quiz
   12. **Unit Test - (Must be taken in Person)**
       1. Unit Test Review
4. Geometric Modeling in Two Dimensions
   1. Area of Triangles and Parallelograms
      1. Instruction
         1. How are areas of triangles and parallelograms in the coordinate plane calculated?
      2. Assignment
         1. Practice finding areas of triangles in the coordinate plane.
      3. Quiz
   2. Perimeter and Area of Rhombi, Trapezoids, and Kites
      1. Instruction
         1. How can you find the area or perimeter of a trapezoid, rhombus, or kite?
      2. Assignment
         1. Practice using areas and perimeters of trapezoids, rhombi, and kites.
      3. Quiz
   3. Angle Measures of Polygons
      1. Instruction
         1. What is the relationship between the angle measures of triangles and other polygons?
      2. Assignment
         1. Practice with the measures of interior and exterior angles of polygons.
      3. Quiz
   4. Area of Regular Polygons
      1. Instruction
         1. How do you find the area of a regular polygon?
      2. Assignment
         1. Practice with the area of regular polygons.
      3. Quiz
   5. Area of Composite Figures
      1. Instruction
         1. How can areas of composite 2-D figures be found using simple 2-D shapes?
      2. Assignment
         1. Practice finding the area of composite 2-D figures.
      3. Quiz
   6. Density and Design Problems
      1. Instruction
         1. How is geometry used to model density and design problems?
      2. Assignment
         1. Practice solving modeling problems with density and design.
      3. Quiz
   7. **Unit Test - (Must be taken in Person)**
      1. Unit Test Review
5. Geometric Modeling in Three Dimensions
   1. Three-Dimensional Figures and Cross Sections
      1. Instruction
         1. How are areas of triangles and parallelograms in the coordinate plane calculated?
      2. Assignment
         1. Practice identifying three-dimensional solids and the two-dimensional figures that created them.
      3. Quiz
   2. Volume of Prisms
      1. Instruction
         1. How can the volume of a prism be determined?
      2. Assignment
         1. Practice solving for the volume of right and oblique prisms.
      3. Quiz
   3. Volume of Pyramids
      1. Instruction
         1. How can you find the volume of a pyramid?
      2. Assignment
         1. Practice calculating the volume of right and oblique pyramids.
      3. Quiz
   4. Volume of Cylinders, Cones, and Spheres
      1. Instruction
         1. How can you find the volume of a cylinder, cone, or sphere?
      2. Assignment
         1. Practice solving problems involving the volume of cylinders, cones, and spheres.
      3. Quiz
   5. Cavalieri's Principle and Volume of Composite Figures
      1. Instruction
         1. How can the volume of a composite 3-D figure be found using simple 3-D shapes?
      2. Assignment
         1. Practice comparing volumes and calculating volumes of composite figures.
      3. Quiz
   6. **Unit Test - (Must be taken in Person)**
      1. Unit Test Review
6. Applications of Probability
   1. Sets and Venn Diagrams
      1. Instruction
         1. What are sets and how can they be represented?
      2. Assignment
         1. Practice interpreting Venn diagrams.
      3. Quiz
   2. Finding Outcomes
      1. Instruction
         1. How can you use permutations or combinations to determine the number of possible outcomes of an event?
      2. Assignment
         1. Practice solving problems using factorials, permutations, and combinations.
      3. Quiz
   3. Theoretical and Experimental Probability
      1. Instruction
         1. How can you calculate the probability of an event occurring?
      2. Assignment
         1. Practice with experimental and theoretical probability.
      3. Quiz
   4. Independent and Mutually Exclusive Events
      1. Instruction
         1. How do you calculate the probabilities of mutually exclusive and independent events?
      2. Assignment
         1. Practice calculating probabilities using addition and multiplication rules.
      3. Quiz
   5. Conditional Probability
      1. Instruction
         1. How can you calculate a conditional probability?
      2. Assignment
         1. Practice calculating and applying conditional probabilities.
      3. Quiz
   6. Probability and Two-Way Tables
      1. Instruction
         1. How can two-way tables be used to find conditional probability?
      2. Assignment
         1. Practice analyzing two-way tables to determine conditional probabilities and independent events.
      3. Quiz
   7. Probability with Combinations and Permutations
      1. Instruction
         1. How can combinations and permutations help calculate the probability of compound events?
      2. Assignment
         1. Practice writing and solving problems involving probability of compound events.
      3. Quiz
   8. Performance Task: Applying Probability Concepts
      1. Instruction
         1. How can probability be applied to decision making?
      2. Preparing for Your Performance Task
         1. Prepare to show what you know about using probability to make decisions in a Performance Task.
   9. **Unit Test - (Must be taken in Person)**
      1. Unit Test Review
7. Cumulative Exam - (Must be taken in Person)
   1. Cumulative Exam Review