

**University of South Carolina**  
**Math 222: Math for Elementary Educators II**  
**Instructor: Austin Mohr**  
**Section 002**  
**Fall 2010**

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**Final Exam Study Guide**

Test Wednesday, December 8 at 2:00 pm

Be sure you can work problems or explain concepts from the following list. Remember that you may bring in a single sheet of notes to the exam.

- Determine how many lines/planes can be formed by a given set of points. (Quiz 1.1b,c, Midterm 10)
- Use transversals to determine when given angles are equal. (Quiz 1.3, Midterm 7a)
- Use hierarchy of quadrilaterals to determine whether one type of quadrilateral is always another type, as well. (Quiz 1.4, Midterm 11)
- Determine if a given set of faces can meet at a vertex of a polyhedron. (Quiz 1.6c, Midterm 12)
  - These problems often make use of the formula for the sum of interior angles of an  $n$ -gon.
- Similar/Congruent Triangles (Midterm 7)
  - Use similarity/congruence rules to determine if two triangles are similar.
  - Use scale factors to find lengths of sides in similar triangles.
- Right Angle Trigonometry (Quiz 2.4, Midterm 8)
  - Use trigonometric functions to find missing sides.
  - Use inverse trigonometric functions to find missing angles.
- Find the equation of a line through two points. (Midterm 9b)

- Convert from one unit of measurement to another. (Quiz 3.1a, but you don't need to know about scientific notation)
- Perimeter/Area/Surface Area/Volume (Quiz 3.2, 3.3)
  - Find area/surface area by breaking into triangles, rectangles, and sectors (parts of circles).
  - Find volume of prisms.
  - In all of the above, be able to work with variables ( $h$  for height,  $r$  for radius, etc.) instead of just numbers.
- Find distance between two points in two-dimensional space. (Quiz 3.5a)
- Understand that a circle is the collection of all points that are a fixed distance (the radius) from the center.
- Translate points. (Quiz 4.2a,b)
- Symmetry (Quiz 4.5)
  - Draw lines of symmetry.
  - Give angle of a rotational symmetry.