

Semester Outline

M316L - Fall 2009

This is a list of the topics that you should know for the final. It is not completely exhaustive, but I hope it is close. Be sure to see the final section for more details.

Section 8.1: Basic Concepts of Geometry

- Basic terms: point, line, plane, segment, ray
- Relationships: colinear, coplanar, intersection, perpendicular, parallel, concurrent, skew
- Angles, degrees, vertex, side, adjacent, vertical, complementary, interior, exterior, right, obtuse, acute, straight

Section 8.2: Two-Dimensional Figures

- Curves: closed, simple, interior, exterior
- Polygons: vertices, sides, congruence, convexity, diagonals, regular, measures of interior angles
- Triangles, isosceles, scalene, equilateral, right, obtuse, acute
- Quadrilaterals, trapezoid, kite, parallelogram, rhombus, rectangle, square
- Circles, diameter, radius
- Coordinate geometry, distance, midpoints

Section 8.3: Three-Dimensional Figures

- Polyhedra: vertex, edge, face, Euler's Formula, prism (right), base, lateral face, pyramid, apex, tetrahedron, octahedron
- Properties: cross sections, nets, isometric views, convexity
- Non-polyhedra: cylinder (right), cone (right), sphere

Section 9.1: Congruence Transformation

- Congruence
- Transformations: rotation, reflection, translation, how to specify each
- Composing transformations

Section 9.2: Symmetry

- Symmetry: reflection, rotation, translation
- Symmetries of a figure/Symmetry groups

Section 9.3: Similarity Transformations

- Similarity/Proportionality
- Dilation (from the handout), scale factor
- Topological transformations, topological equivalence (this is not in the book)

Section 10.1: Systems of Measurement

- Units: length, area, volume, time, angle,
- Metric system
- Conversions, precision, accuracy

Section 10.2: Perimeter and Area

- Perimeter, circumference
- Pythagorean Theorem
- Area formulas: triangle, parallelogram, trapezoid, circle, irregular figures
- Relationship between perimeter and area
- Fractals (from the handout)

Section 10.3: Surface area and volume

- Surface area and volume formulas: prisms, cylinders, cones, spheres (don't memorize)
- Relationship with nets

Section 7.1: The Process of Collecting and Analyzing Data

- Representing data: frequency table, bar graph, circle graph/pie chart, line plot
- Measures of central tendency: mean, median, mode

Section 7.3 Chance

- Outcome, sample space, event
- Equally likely, not equally likely
- Types of events: impossible, certain, dependent, independent
- Special probabilities for mutually exclusive and complementary events
- Multiplication principle

Other Remarks

- You may continue to ignore the material that was omitted for the previous exams.
- You are responsible for the material discussed in class (e.g., explorations), descriptions of which can be found on the class website.
- You are responsible for material from work done outside of class (e.g., projects and homework).
- I will provide you with formulas for converting between U.S. and metric units, and surface area and volume formulas.