**Honors Geometry**

**Midterm Outline**

**Chapter 1**

Points, lines, planes, undefined terms (1.1)

Collinear points, collinear planes, defined terms (1.1)

Line segment, endpoints, ray, opposite rays, notation for all (1.1)

Intersection (1.1)

Postulate, Ruler Postulate, between, Segment Addition Postulate (1.2)

Congruent segments, distance between, coordinates (1.2)

Midpoint, segment bisector (1.3)

Midpoint and Distance Formulas (1.3)

Angle, parts – sides, vertex, measuring using a protractor (1.4)

Classifying an angle – acute, right, obtuse, straight (1.4)

Angle Addition Postulate (1.4)

Congruence (notation and meaning), congruent angles (1.4)

Angle bisector (1.4)

Constructing a congruent segment and angle (1.4)

Constructions of segment and angle bisectors

Complementary and supplementary angles (1.5)

Adjacent angles, linear pair, vertical angles (1.5)

Polygon – parts, definition (1.6)

Convex, concave, equilateral, equiangular, regular (1.6)

Perimeter, circumference, area (1.7)

**Chapter 2**

Inductive reasoning, conjecture, counterexample (2.1)

Conditional statement, if-then form, hypothesis, conclusion (2.2)

Negation, inverse, converse, contrapositive, biconditional statement (2.2)

Equivalent statements, perpendicular lines (2.2)

Deductive reasoning, Law of Detachment, Law of Syllogism (2.3)

Point, line and plane postulates (2.4)

Line perpendicular to a plane (2.4)

Properties of Equality, Distributive Property (2.5)

Reflexive, Symmetric, Transitive Properties of Equality (2.5)

Theorem, proof (2.6)

Algebra proof, segment and angle proof (fill-ins) (2.6)

Right Angle Congruence Theorem (2.7)

Congruent Complements Theorem, Congruent Supplements Theorem (2.7)

Linear Pair Postulate, Vertical Angles Congruence Theorem (2.7)

**Chapter 3**

Parallel lines, skew lines, intersecting lines, perpendicular lines (3.1)

Parallel planes (3.1)

Parallel Postulate, Perpendicular Postulate (3.1)

Transversal, corresponding angles, alternate interior angles, alternate exterior angles, consecutive interior angles (3.2)

Parallel lines cut by a transversal, postulates and theorems involved (3.2)

Converse postulates and theorems to prove lines parallel (3.3)

Paragraph proof (3.3)

Transitive property of parallel lines (3.3)

Slope – rise over run, formula (3.4)

Slopes of parallel and perpendicular lines postulates (3.4)

Slope-intercept form of a line (3.5)

Writing and graphing equations using slope-intercept form (3.5)

Point-slope and Standard Form of a line (3.5)

Theorems involving perpendicular lines (3.6)

Perpendicular Transversal Theorem, Lines Perpendicular to a Transversal Theorem (3.6)

Distance from a point to a line (3.6)

Perpendicular and parallel lines through a given point constructions

**Chapter 4**

Triangle definition, classifying triangles by their sides and angles (4.1)

Interior angles and exterior angles of a triangle (4.1)

Triangle Sum Theorem, Exterior Angle Theorem (4.1)

Corollary to a theorem, Corollary to the Triangle Sum Theorem (4.1)

Congruent figures, corresponding parts (4.2)

Third Angle Theorem (4.2)

Properties of Congruent Triangles – reflexive, symmetric, transitive (4.2)

SSS Congruence Postulate (4.3)

SAS Congruence Postulate, HL Congruence Theorem (4.4)

Parts of right triangle – hypotenuse and legs (4.4)

ASA Congruence Postulate, AAS Congruence Theorem (4.5)

CPCTC (corresponding parts of congruent triangles are congruent) (4.6)

Isosceles triangles, its parts, and Base Angles Theorem and converse (4.7)

Equilateral triangles and the corollaries to the Base Angles Theorem and converse (4.7)

**Transformations**

Define, preimage, image (packet)

Reflection, translation, rotation, dilation – determining from a picture and determining (packet)

Congruence transformation (4.8)

Coordinate notation for translations (4.8)

Reductions and enlargements for dilation (6.7)

Isometry (9.1)

Isometry theorems (9.1, 9.3, 9.4)

Glide reflections and compositions (9.5)

Symmetry – line and some rotational (9.6)

**Chapter 8**

Polygons, diagonals (8.1)

Polygon Interior Angles Theorem, corollary, Polygon Exterior Angles Theorem (8.1)

**Tests and quizzes as study guides: Construction to know:**

Chapter 1 sections 1.1 – 1.5 TEST copying a line segment

Chapter 1 sections 1.6, 1.7 copying an angle

and Chapter 8 section 8.1 TEST bisecting a line segment

Chapter 2 sections 2.1 – 2.7 TEST bisecting an angle

Chapter 3 sections 3.1 – 3.3 TEST creating a line parallel to

Chapter 3 sections 3.4 – 3.6 TEST a given line through a

Chapter 4 sections 4.1 – 4.7 TEST given point

Transformation Unit TEST creating a line perpendicular

Quiz - Notations to a given line through a

Quiz – Constructions given point

Quiz – Conditional Statements creating a congruent triangle

Quiz – Properties

Quiz Chapter 3 section 3.1

Quiz – Slope

Quiz Chapter 4 sections 4.1, 4.2