Math 487 - Foundations of Geometry
Day 19 Group Assignment **Name:**_____

Exam 2 Review:

1. Explain the difference between an axiomatic system and a model.

2. Give an example of an SMSG axiom that is independent of the other axioms. Provide justification for your answer.

3. How do we know that the Euclidean Parallel Postulate is Independent of the other axioms?

4. For each statement, determine whether the statement is true or false. Then briefly justify your answer. Assume each statement is being made about a neutral geometry (i.e. every SMSG Postulate except the Euclidean parallel postulate holds).

   (a) Parallel lines exist.

(b) If a line ℓ is perpendicular with distinct lines $\overleftrightarrow{AB}$ and $\overleftrightarrow{CD}$, then the lines $\overleftrightarrow{AB}$ and $\overleftrightarrow{CD}$ are parallel.

(c) Given 3 distinct collinear points, exactly one is between the other two.

(d) If $m\left(\angle BAC\right) = m\left(\angle BAD\right) + m\left(\angle DAC\right)$, then $D \in int\left(\angle BAC\right)$.

5. Determine whether or not the Missing Strip Plane satisfies the Euclidean Parallel Postulate.