Daniel Rogers   Due 10/3

1. The parallel axiom is genuine and cannot be deduced from the other 4 axioms as the other 4 remain true in non-Euclidean geometry, while the parallel axiom does not.

2. Gödel Coding: There is a number theory statement to match every logical reasoning. A number theory statement says to itself: "I am not provable. The meta-proof says the above statement is true. Proof by contradiction suggests a statement that is wrong so that the other is true.

3. Dr. Z says there exist true but unprovable statements that are meaningful, since every meaningful statement can be proved or disproved. On Turing's opinion, Dr. Z says everything is finite, if we think in a finitistic way, the problem is solved.

4. i) A : B is ^{T}T

   B : A is L^T

   $[A,B] = [T,T]$ ✗ ; $[A,B] = [T,F]$ ✓ ; $[A,B] = [F,T]$ ✓ ;

   $[A,B] = [F,F]$ ✗

ii) A : B is ^TT

    B : A is L^T ✗

    $[A,B] = [T,T]$ ✗ ; $[A,B] = [T,F]$ ✗ ; $[A,B] = [F,T]$ ✗ ;

    $[A,B] = [F,F]$ ✗

iii) A : B is L^T

     B : C is L^T

     C : A is L^T

     $[A,B,C] = [T,T,T]$ ✗ ; $[A,B,C] = [T,T,F]$ ✗ ; $[A,B,C] = [T,F,T]$ ✗

     $[A,B,C] = [F,T,T]$ ✗ ; $[A,B,C] = [T,F,F]$ ✗ ; $[A,B,C] = [F,T,F]$ ✗

     $[A,B,C] = [F,F,T]$ ✗ ; $[A,B,C] = [F,F,F]$ ✗

iv) A : B is L^T

    B : C is L^T

    C : D is L^T

    D : A is L^T

    $[A,B,C,D] = [T,F,T,F]$ ✓ ; $[A,B,C,D] = [F,T,F,T]$ ✓

           are only consistent scenarios.