## Assignment G - Computability 1

Using Online text, outline each of the following proofs. Reflect on your learning experience. Add a section to Online Text that reports your insights and observations.

1. Proofs that the class of Turing-recognizable languages is closed under each of the following language operations:

1.a. Union

1.b. Intersection

1.c. Concatenation

1.d. Kleene Star

2. Proofs that the class of Turing-decidable languages is closed under the following language operations:

2.a. Union

2.b. Intersection

2.c. Concatenation

2.d. Kleene Star

3. Proofs that the following languages are undecidable, where Σ = { 0, 1}. (Use reductions from ATM or other problems already known to be undecidable.)

3.a. LA = { < M > : M is a Turing machine and M accepts the string 001 }

3.b. LB = { < M > : M is a Turing machine, M accepts 001 and M does not accept 110 }