Name:_____

Due: Monday, September 26th, 12:00pm

Instructions: Complete each part to the best of your ability. Hand in your results by 4:00pm on Monday, Sept. 26th. This assignment is worth up to 5 points, depending on the amount of progress you make.

1. **Conjecture:** Given a prime p, every number of the form $2^p - 1$ is also a prime number.

   Determine whether or not this conjecture is true. Either provide a proof of the conjecture or a specific counterexample.

2. Research numbers of the form $2^p - 1$ where p is a prime. What is known about such numbers? What is conjectured about them?