Number Theory HW Week 3

1. Explain why or why not each of the following have solutions.
2. Find all solutions to the one above that does have solutions.
3. Use the prime number theorem to estimate how many primes there are less than 100 *and* find the number of primes less than 100.
4. It has been conjectured that there are infinitely many primes of the form . Find the first 5 such primes.
5. It has been conjectured that there are infinitely many primes of the form . Find the first 4 such primes.

Point values: 1 is worth 5, 2 is worth 8, 3,4,5 are worth 4.