Number Theory
Quiz 2

1) From the sieve of Eratosthenes we can see that $\pi(20)$ is

A: 14
B: 19
C: 8
D: 2

2) If a and b are relatively prime positive integers, then the arithmetic progression $an + b$; $n = 1, 2, 3, ...$ contains

A: No primes
B: Infinitely many primes
C: An odd number of primes
D: A finite number of primes

3) For any positive integer n there are at least

A: n primes less than n
B: No primes greater than $\frac{n}{2}$
C: n consecutive composite positive integers
D: None of the above

4) The Greatest Common Divisor between 200 and 350 is:

A: 25
B: 20
C: 350
D: 50

5) The Greatest Common Divisor between 19 and 17 is:

A: 19
B: 17
C: 1
D: None of the above

6) Every prime number is an odd positive integer.

True
False

7) There are infinitely many prime numbers.

True
False

8) $\frac{\pi(n)}{\frac{n}{\log n}}$ tends to 1 as n tends to infinity

True
False

9) The greatest common divisor of the integers a and b, not both 0, is the greatest positive integer that is a linear combination of a and b.

True
False

10) There is a formula that only generates primes.
Hint: A formula is not necessarily a simple function such as $y = 3x + 8$. A formula can be recursive, multi-variable, or both.

True
False