Name:_____

1. (2) Find the prime factorization of 100.

2. (2) Find the prime factorization of 7x7x7x7x7x7x7x7x7x7x7x7x7x7x7x7x7x7x7x7 (7 multiplied by itself twenty times). Hint: You don't actually have to calculate the number!

3. (2) Give the formal definition of a prime number, i.e. "p is prime if and only if…"

4. (2) "The product of three prime numbers is prime".
   True/False? If true, give a proof. If false, give an example where it is false.

5. (2) If p,q,r, and s are distinct primes, how many different distinct divisors does pxqxrxs have? Explain.