Assignment 3

Make sure to write complete proofs. Try to avoid skipping steps. Write clear sentences.

1. True or False? Every natural number is either prime or composite.
2. Find all common divisors of the numbers 365 and 219.
3. True or False? For every $a, b, c > 1$ natural numbers, if a divides $b + c$ then it must divide b or c (or maybe both, but it has to divide at least one of them). Prove or provide counter-example.
4. True or False? The sum of two composite numbers is composite. Explain.
5. True or False? The sum of two prime numbers is never prime. Explain.
6. Show that 73 is a prime number.