Section 4.2 Divisibility and Euclidean Algorithm (Part 1)

Divisibility

P 1. Determine if the number 369 divides 3. Is 369 divisible by 3?

P 2. Let a and b be integers. Prove that if $a + 5b$ is divisible by 7 then $10a + b$ is divisible be 7.

P 3. Suppose a, b, and c are integers such that $c \mid a$ and $c \mid b$. Show that $c \mid (ax + yb)$ for any integers x and y.

GCD

P 4. What is the greatest common divisor of 70 and 42?

P 5. Suppose a is a nonzero integer. What is $\gcd(a, 0)$?

P 6. Prove that integers a and b have at most one greatest common divisor.

P 7. What is the least common multiple of 7 and 13?