1. Let \( f(x) = 2x \) if \( x \) is a perfect square; \( f(x) = 2x + 1 \) otherwise. Show that \( f \) is primitive recursive.

2. Let \( \pi(x) \) be the number of primes that are less or equal to \( x \). Show that \( \pi \) is primitive recursive.

3. Let \( \text{RP}(x, y) \) be true if \( x \) and \( y \) are relatively prime (that is, their greatest common divisor is 1). Show that \( \text{RP}(x, y) \) is primitive recursive.

4. Let \( \text{gcd}(x, y) \) be the greatest common divisor of \( x \) and \( y \). Prove that \( \text{gcd} \) is primitive recursive.

5. Let \( \text{lcm}(x, y) \) be the least common multiple of \( x \) and \( y \). Prove that \( \text{lcm} \) is primitive recursive.