**Project 2.35:** Compute $\gcd(4, 6)$, $\gcd(7, 13)$, $\gcd(-4, 10)$ and $\gcd(-5, -15)$. You do **NOT** have to prove that you have found the gcd. Instead, show that the number you think of as $\gcd(a, b)$ belongs to the set $S_{a,b}$, and exhibit a couple of other elements of $S_{a,b}$. In all cases you should exhibit the integers $x$ and $y$ in the definition of the gcd.

**Project 3.1:** Express each of the following statements using quantifiers.

(i) There exists a smallest natural number.

(ii) There does not exist a smallest natural number.

(iii) Every integer is the product of two integers.

(iv) The equation $x^2 - 2y^2 = 3$ has an integer solution.

**Project 3.7:** Negate each of the following statements

(i) Every cubic polynomial has a real root.

(ii) $G$ is normal and $H$ is regular.

(iii) $\exists!0$ such that $\forall x$, $x + 0 = x$

(iv) The newspaper article was neither accurate nor entertaining.

(v) If $\gcd(m, n)$ is odd then $m$ or $n$ is odd.

(vi) $H/N$ is a normal subgroup of $G/N$ if and only if $H$ is a normal subgroup of $G$

(vii) For each $\epsilon > 0$, there exists $N \in \mathbb{N}$ such that for all $n \geq N$, $|a_n - L| < \epsilon$