Section 11.3

11.32 Give an example of a set $S$ of four distinct positive integers such that the greatest common divisor of all six pairs of elements of $S$ is 6.

11.34 Prove that if $a \in \mathbb{Z}$ and $n \in \mathbb{N}$, then $\gcd(a, a + n) \mid n$.

11.36 For positive integers $a$, $b$, and $c$, the greatest common divisor $\gcd(a, b, c)$ of $a$, $b$, and $c$ is the largest positive integer that divides each of $a$, $b$, and $c$. Let $d = \gcd(a, b, c)$, $e = \gcd(a, b)$, and $f = \gcd(e, c)$. Prove that $d = f$.

Section 11.4

11.38 Use the Euclidean algorithm to determine integers $x$ and $y$ such that

(a) $\gcd(51, 288) = 51x + 288y$