5a) Let k be an arbitrary integer;

$\boxed{1}$ Since $13k+2 = 2(5k-1) + 3k+4$

$\Rightarrow \gcd(13k+2,\ 5k-1) = \gcd(5k-1,\ 3k+4)$,

$\boxed{2}$ Since $5k-1 = -1(3k+4) + 2k-5$

$\Rightarrow \gcd(5k-1,\ 3k+4) = \gcd(3k+4,\ 2k-5)$

$\boxed{3}$ Since $3k+4 = 1(2k-5) + k+9$

$\Rightarrow \gcd(3k+4,\ 2k-5) = \gcd(2k-5,\ k+9)$

$\boxed{4}$ Since $2k-5 = 1(k+9)\ k-14$

$\Rightarrow \gcd(2k-5,\ k+9) = (k+9,\ k-14)$

$\boxed{5}$ Since $k+9 = 1(k-14) + 23$

$\Rightarrow \gcd(k+9,\ k-14) = \gcd(k-14,\ 23)$

Since 23 is prime the only possible divisors are $\{1, 23\}$

$\therefore$ the elements of the set $\{g(k) : k \in \mathbb{Z}\}$ are $\{1, 23\}$

b) Since the only divisor that's greater than 1 $(g(k) > 1)$ is 23, it means that;

$g(k) = 23 \mid k - 14 \Rightarrow$ $\leftarrow 23 \mid (k + 14)$ gcd $\boxed{5}$

$\therefore a = 23$ and $b = -14$