1. Use the Euclidean algorithm to compute the greatest common divisor $d$ of 3780 and 4342, and find integers $m$ and $n$ so that $d = 3780m + 4342n$.

2. Recall that we defined the Fermat numbers $f_n$ with the formula $f_n = 2^{2^n} + 1$ if $n \geq 0$, and proved that $f_0f_1f_2 \cdots f_n + 2 = f_{n+1}$. Use this formula to show that if $m < n$, then $f_m$ and $f_n$ are relatively prime.