Question: 1

Solution:

Question: 3

Let $f(1) = 3$ and $f(n + 1) = 3^{f(n)}$. Find the last two digits of $f(2012)$.

Solution: We claim that $3^{20} = 1 \pmod{100}$, which is trivially shown by Fermat's or Euler's. As such, we take the exponent $\pmod{20}$ to find the last two digits in this cyclic