Question 1: Using a for-loop, evaluate the sum $\sum_{k=1}^{10} k^4$

Question 2: Define a python function `compute_sum` that takes in an argument `n` and returns $\sum_{k=1}^{n} k^4$. Evaluate this function for the following values of n: 2, 3, 5, 10.

Question 3: Write a python function `divisible_by_27` that takes in an argument n and returns the boolean `True` if n is divisible by 27, and the boolean `False` if it is not divisible by 27.

Question 4: Using the results from questions 2 and 3, find the smallest value of n such that $\sum_{k=1}^{n} k^4$ is divisible by 27.

Question 5: Write a python function `sum_divisible_by_m` that takes in an argument m, and returns the smallest value of n such that $\sum_{k=1}^{n} k^4$ is divisible by m.