CSE 374: Algorithms I (Spring 2020)

Coding Homework #2 Binary Search

Grading Rubric:

1. The program submitted for this homework must pass the necessary base case test(s) in order to qualify for earning any score at all. Programs that do not meet base case requirements will be assigned zero!
2. The code should be well formatted and commented on. The basic requirement is the code is understandable for a person who has basic coding knowledge.
3. There is some additional test case will be used for grading. Your code must complete it correctly and efficiently

Requirements:

Write a program to find the n-th ugly number.

Ugly numbers are positive integers that are **divisible** by a **or** b **or** c.

Example 1:

Input: n = 3, a = 2, b = 3, c = 5
Output: 4
Explanation: The ugly numbers are 2, 3, 4, 5, 6, 8, 9, 10... The 3rd is 4.
Example 2:

Input: n = 4, a = 2, b = 3, c = 4
Output: 6
Explanation: The ugly numbers are 2, 3, 4, 6, 8, 9, 10, 12... The 4th is 6.
Example 3:

Input: n = 5, a = 2, b = 11, c = 13
Output: 10
Explanation: The ugly numbers are 2, 4, 6, 8, 10, 11, 12, 13... The 5th is 10.
Example 4:

Input: n = 1000000000, a = 2, b = 217983653, c = 336916467
Output: 1999999984