1

For a nonnegative integer n, if the remainder is 1 when 2^n is divided by 3, then which of the following must be true?

I. n is greater than zero.
II. 3^n = (-3)^n
III. √2^n is an integer.

A. I only
B. II only
C. I and II
D. I and III
E. II and III

2

If n is a positive integer, what is the remainder when 3^(8n+3) + 2 is divided by 5?

A. 0
B. 1
C. 2
D. 3
E. 4

3

What is the remainder when 43^86 is divided by 5?

A. 0
B. 1
C. 2
D. 3
E. 4

4

If N = 1000x + 100y + 10z, where x, y, and z are different positive integers less than 4, the remainder when N is divided by 9 is

(A) 2
(B) 4
(C) 6
(D) 8
(E) 9