DC Math Circle - The study of numbers - 02/06/2018

Question 1

Is the number $10^{2010} + 2$ divisible by 3?

Question 2

How many 2's are there in the prime factorization of the number 16! ?

Question 3

Suppose you write an integer number and then a second number made up of the digits of the first in the reverse order. Prove that the difference between the two numbers is divisible by 9.

Question 4

How can one know whether an integer is divisible by 6, 10, 12, 18 ?

Question 5

How many zeros are at the end of 10! , 25! , 100! ?