

# UW Math Circle

May 9, 2013

1. In how many ways can you choose a subset of the numbers  $1, 2, \dots, n$  that do not contain a pair of consecutive numbers? (For example:  $1, 3, 5, 6, 9$  does not qualify because it contains 5 and 6.)
2. In how many ways can you make an  $n$ -digit number of 0's and 1's that does not contain consecutive 1's?
3. In how many ways can you make a list of 1's and 2's that add up to  $n$ ?
4. In how many ways can you make a list of odd numbers that add up to  $n$ ?
5. In how many ways can you make a list of numbers that are larger than 1 and add up to  $n$ ?

$n$	Problem 1	Problem 2	Problem 3	Problem 4	Problem 5
1					
2					
3					
4					
5					