MTH 3270 Final Project Weekly Report

Carlos Galvan Jackeline Escalante

Week of 03/23/2020

What did you try?

Old approach: Last week we came up with a way to break down n. It starts by either dividing by 2 if n is even. If n is odd we can turn it even by subtracting one from it, thus turning it even (which can now be divided by one).Each time we do this, all the integers get placed inside a group. We do this until all of the integers are 1, then count the number of integers to get our result. In this example we used the integer 10.

New Approach: This week, in order to prove $C_{10} = 7$. We created a list of different combinations that would sum up to the integer of 10.(See table 1 below). From there we used last week's approach in order to break down the combinations that would then give us the number of one integers(See table 2 below).

What did you observe/what did you prove?

What we are able to see from the tables shown, with the different number of combinations broken down. We are able to also see the number of one integers corresponding to its combination. So, $C_{10} = 7$.

What are your next steps?

Our next step is to find the same steps to an odd integer.

Number of Combinations:Table 1

One	Two	Three	Four	Five	Six	Seven	Eight	Nine
(1 * 1) + 9	(2 * 1) + 8	(3 * 1) + 7	(4 * 1) + 6	(5 * 1) + 5	(6 * 1) + 4	(7 * 1) + 3	(8 * 1) + 2	(9 * 1) + 1
(1 * 2) + 8	(2 * 2) + 6	(3 * 2) + 6	(4 * 2) + 2	(5 * 2)				
(1 * 3) + 7	(2 * 3) + 4	(3 * 3) + 1						
(1 * 4) + 6	(2 * 4) + 2							
(1 * 5) + 5	(2 * 5)							
(1 * 6) + 4								
(1 * 7) + 3								
(1 * 8) + 2								
(1 * 9) + 1								
(1 * 10)								

Number of One Integers:Table 2

One	Two	Three	Four	Five	Six	Seven	Eight	Nine	Ten
8	8	9	9	10	9	9	8	8	8
8	9	9	8	7					
9	9	8							
9	8								
10	7								
9									
9									
8									
8									
8									