COT 3100 Recitation #7: Problems Dealing with Mean and Mode
10/5/2020-10/9/2020

Problem Solved in Recording

1) Five positive consecutive integers starting with *a* have average *b*. What is the average of 5 consecutive integers that start with *b*, in terms of *a*?

2) A list of 50 numbers has an average of 38. If we remove the values 45 and 55 from the list, what is the new average of the remaining 48 numbers?

3) In a certain population the ratio of the number of women to the number of men is 11 to 10. If the average age of the women is 34 and the average age of the men is 32, then what is the average age of the population?

4) The table below shows the number of contestants who solved n problems correct on a previous mathematics exam which contained 15 questions:

N	0	1	2	3	…	13	14	15
number of contestants solving n problems	9	5	7	23		5	2	1

In addition, the following facts are known about the exam:

Those who answered 3 or more questions correctly averaged solving 6 questions each.
Those who answered 12 of fewer questions correctly averaged solving 5 questions each.

What was the sum of the number of problems solved by each of the contestants?

Problems for Recitation

1) The average value of all the pennies, nickels, dimes and quarters in Paula's purse is 20 cents. If she had one more quarter, the average value would be 21 cents. How many dimes does she have in her purse?

2) The 36 distinct integers from -15 to 20, inclusive fill a 6 x 6 grid such that each row and column sum to the same value. What is this row/column sum?

3) For each positive integer n, the mean of the first n terms of the sequence is n. What is the 2020^{th} term of the sequence?

4) For positive integers m and n such that $m + 10 < n + 1$, both the mean and the median of the set $\{m, m+4, m+10, n+1, n+2, 2n\}$ are equal to n. What is $m + n$?