

## Problem 4: Averaging Digits

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- i) How many 4-digit numbers are composed of four distinct digits (with no leading 0s) such that one digit is the average of the other 3?
- ii) How many such 4-digit numbers with repeated digits are possible?

As always, show your work, fully explain and justify your answer. A solution mainly obtained by computers or calculators will not be accepted.

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Posting Date 2/15/2019. Submit solutions to Noah Aydin, Mathematics Department, RBH 319 (e-mail or hard-copy, but hard copy submissions must include a time stamp) by 4 pm on 3/1/2019 [extended until noon, Sun March 17].