



Problem of the Week

Problem C

Just Like Kayak 1

A palindrome is a word, phrase, or positive integer that reads the same forwards and backwards. For example, “kayak” is a palindrome. The integers 292, 11, and 6 357 536 are also palindromes.

Determine all the five-digit palindromic integers that are divisible by 55.



NOTE: An integer is divisible by 11 exactly when the alternating sum of its digits is divisible by 11.

To find the alternating sum, start with the first digit and alternate subtracting and adding the remaining digits from left to right. For example, 36 784 is divisible by 11 since $3 - 6 + 7 - 8 + 4 = 0$, and 0 is divisible by 11. However 74 253 is not divisible by 11 since $7 - 4 + 2 - 5 + 3 = 3$, and 3 is not divisible by 11.