Subset Sum

1. Can you solve these subset-sum problems?

   (a) Find a subset with sum 53 from {8,9,14,15,16,22,26,32}.

   (b) Find a subset with sum 100 from {9,11,12,26,30,40,43,80,81}.

   (c) Find a subset with sum 42 from {7,9,11,17,20,23,28}

   (d) Find a subset with sum 50 from {3, 3, 4, 7, 7, 8, 20, 21, 34, 41}.

Proposition: Can you mark off exactly 50 points?

My chum and I were taking in the side shows the other day, when we struck what the man told us was the squarest game in the world. There were ten little dummies which you were to knock over with base balls. The man said take as many throws as you like at a cent a piece and stand as close as you please. Add up the numbers on all the men that you knock out and when the sum amounts to exactly 50, neither more nor less, you get a genuine Maggie Cline cigar with a gold band, worth a quarter.

Our money gave out before we learned how to win. And we noticed that lots of people didn't smoke any more Maggie Cline's than we did. ... Can you show how we might have made exactly 50 points, and won a Maggie Cline cigar with a gold band around it?

(Sam Lloyd, 1914)