**Question [2 marks]**

1. Fill each box in a 3-by-3 arrangement of boxes with either 1, 0, or −1. For any such arrangement show that of the eight row, column, and diagonal sums, two sums must be equal. [1 mark]
2. Show that if any 14 integers are selected from the set S = {1, 2, 3, . . ., 25}, there are at least two whose sum is 26. [1 mark]

**Hint**: Let n be a positive integer. If n + 2 integers are selected from the set S = {1, 2, 3, . . ., 2n + 1}, there are at least 2 whose sum is 2n + 2 (generalized version).