

MATH10282: INTRODUCTION TO STATISTICS
SEMESTER 2
SOLUTIONS TO QUIZ PROBLEM 1

Suppose you have the following data: x_1, x_2, \dots, x_n . Let \bar{x} denote the sample mean. Then

$$\begin{aligned}\sum_{i=1}^n (x_i - \bar{x}) &= \left(\sum_{i=1}^n x_i \right) - \sum_{i=1}^n \bar{x} \\ &= \left(\sum_{i=1}^n x_i \right) - n\bar{x} \\ &= n \frac{1}{n} \left(\sum_{i=1}^n x_i \right) - n\bar{x} \\ &= n\bar{x} - n\bar{x} \\ &= 0.\end{aligned}$$

So, the correct answer is c).