

Homework Solutions

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Exercise 56

- (a) Stratified sampling. A few women are selected from each stratum.
- (b) The number women in the professional club is $0.80 \times 520 = 416$, out of which 75 are selected. Therefore, Mrs. Smith's chance is $75/416 = 0.1803$.
- (c) The sample proportion for the local business group is $15/25 = 0.60$ and the sample proportion for the professional group is $60/75 = 0.80$. These individual proportions need to be weighted by the relative sizes of the groups. So the calculation is

$$\begin{aligned} 0.80 \times 0.60 + 0.20 \times 0.80 &= 0.48 + 0.16 \\ &= 0.64. \end{aligned}$$

- (d) It is a statistic.