**Exercises**

1.Suppose we want to estimate the proportion of recipes in the Better Homes & Gardens New Cook Book that do not involve animal products. We plan to take an SRS of the N=1251 test kitchen-tested recipes, and want to use a 95% CI with margin of error 0.03. What is the required sample size?

2. A SRS is chosen from a population of 1000 households. Results are shown below. Estimate mean income and total income and construct a 95% confidence interval for each.

|  |  |
| --- | --- |
| income |  |
|  |  |
| Mean | 60199.95 |
| Standard Error | 6671.014 |
| Median | 47526.5 |
| Standard Deviation | 42191.2 |
| Minimum | 0 |
| Maximum | 215448 |
| Sum | 2407998 |
| Size | 40 |

3. Suppose you wanted to redo the survey above to achieve a moe (margin of error) of $8000. How large a sample size would be needed, if the population from which this sample came has 1000 members?

4. a Describe the difference between coverage error and sampling error in survey statistics.

b. How can sampling error be reduced?

c. How can response error be reduced?

d. What is a probability sample? What is its advantage over a non-probability sample? Give an example of a non-probability sample.