PROBLEM SET 12-5
(Working With Samples)

Find the margin of error for the sample proportion given each sample of size n.

1. $n = 200$ **2.** $n = 800$ **3.** $n = 1200$

Find the sample size that produces each margin of error.

4. $\pm 8\%$ **5.** $\pm 5\%$ **6.** $\pm 1\%$

For 7-8, find a) the sample proportion, b) the margin of error and c) the interval likely to contain the true population proportion.

7.   In a random sample of 408 grocery shoppers, 258 prefer one large trip per week to several smaller ones.

8.   In a survey of 16 people, one person never locks his car.

9.   A radio talk show found that 90% of listeners who called were against building a community recreation center. Can the result be trusted- why or why not?

10.   A biology class counted the number of microorganisms in drops of water from a nearby pond. The class took three samples. Use the table below to determine which sample was the largest and explain your reasoning.

Sample	Standard Deviation
A	1.2
B	1.7
C	2.1

11.   It costs $20 to interview each person for a survey. Find the cost to obtain a $\pm 3\%$ margin of error.

12.   In the fall, researchers tagged fourteen black bears of the northern coastal plain of South Carolina and captured eleven bears the following summer. Of the eleven bears, three were tagged. Predict the black bear population in this region of South Carolina.