**Honors Math 3 Statistics Review Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Margin of Error:**

1. 200 teenagers were surveyed after screening a movie. Of those surveyed, 72% said they enjoyed the movie. Give an interval that is likely to contain the true proportion of all teenagers that enjoyed the movie.

2. In a survey of 225 people, 16% watch soccer live on television. Find the margin of error.

3. In a sample of 400 teachers, 226 preferred to have 4th period planning. Determine (a) sample proportion, (b) margin of error, and (c) the interval likely to contain the true population proportion.

**Sampling:** State the type of sampling each example represents.

4. An interviewer in a mall is told to survey every 5th shopper.

5. A list of students in elementary statistics is obtained in which the individuals are numbered 1 to 540. A professor randomly selects 30 numbers from a pile.

6. Mr. Crayton randomly selects 20 classrooms during first period and surveys all students in those classes.

7. A researcher segments the population of car owners into four groups: Ford, General Motors, Chrysler, and foreign. She obtains a random sample from each group and conducts a survey.

8. A manufacturing company would like to determine the approximate market share of a certain product. A representative of the company is asked to stand in front of a certain grocery store and ask the first 100 people who go into the store whether they use their product.

9. A car company mails a survey to prospective car buyer’s asking their opinions about the company’s products.

**Observation vs. Experiment:** State whether each scenario is an observational study, or experiment.

10. A parent group randomly examines 25 randomly selected PG-13 movies and 25 randomly selected PG movies and records the number of curse words that occur in each. They then compare the number of curse words between the two movie ratings.

11. Fifty people with clinical depression were divided into two groups. Over a 6 month period, one group was given a traditional treatment for depression while the other group was given a new drug. The people were evaluated at the end of the period to determine whether their depression had improved.

12. One hundred people who regularly work out at a gym and one hundred people who do not workout are tested for their cholesterol levels to determine whether exercise helps lower cholesterol.

13. A sample of 504 patients in early stages of Alzheimer’s disease is divided into two groups. One group receives an experimental drug; the other group receives a placebo. The advance of the disease in the patients from the two groups is tracked at 1-month intervals over the next year.



