Name: _____   Date: _____

Section 3.2 Collect and Analyse Data

1. Identify each as a primary or a secondary source of data.
    a) Rachel has her friend Siobhan survey students at her school about their musical preference.
    b) Monique asks students in her science class to suggest the most important scientific discovery over the past 100 years.
    c) Ruis checks Statistics Canada to find out which Ontario provincial park is the largest.
    d) Travis' survey indicated that almost 40% of his friends have the same lunch every Monday.

2. a) Explain why information such as the average number of children per family in the year 1910 cannot be found using a primary source.
    b) What possible secondary sources could be used to find the information in part a)?
    c) In general, is a primary source more or less accurate than a secondary source?

3. Identify the bias in each sample.
    a) A phone-in radio show asks callers their opinion about the city's baseball team not making the playoffs the day after they are eliminated.
    b) To learn which team Canadians feel will win the Stanley Cup, researchers call 100 people from Ottawa.
    c) To find the age that most Canadians feel should be the legal driving age, researchers ask 3000 high school students.

4. Suggest a way to reduce the bias in each sample in question 3.

5. Explain why a biased sample may not produce accurate results.

6. One way to judge the success of a movie is to rank it by ticket sales. However, tickets are more expensive today and theatres hold more people than in the past. Suggest a way to remove these biases so that past and present movies can be compared fairly.

7. A popular television sports show asked people to phone in their pick for the NBA Most Valuable Player. With 30 min left in the show, they announce the results to that point.
    a) How might this announcement affect the outcome of the survey?
    b) Does reporting the early results make the survey biased? Explain why or why not.

8. a) Explain the difference between response bias and non-response bias.
    b) Are the two biases opposites? Explain.
    c) Give an example of each.

9. Melissa asks five of her friends about their favourite type of movie. Four say their favourite is comedy. She reports that 80% of teenagers prefer comedies over all other movie types. Explain two flaws in her survey.

10. A local soccer league wants to give its players a bonus: either free soccer balls, free movie tickets, or coupons for the snack bar.
    a) Design a survey the league can use to decide which bonus to offer.
    b) How can the data be collected?
    c) Is it possible to survey the whole population? Explain.