Name: _____ Date: _____

BLM 4–9

Section 4.5 Critical Analysis

1. Identify each example as descriptive or inferential statistics. Explain your choice.

a) A toy company's customer service department received 564 phone calls in one month, 42 of which were about defective products.

b) A national survey was sent to 10 000 randomly selected homes across Canada. The results of the survey indicate that 37.5% of Canadians use the Internet to file their personal income tax.

c) Based on a random sample of 1000 students interviewed at Ontario high schools, 82% of high school students spend at least 1 h per night on homework.

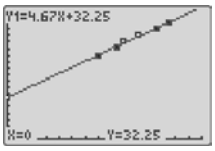
d) Every student at a community college was surveyed. It was found that 83% of students enjoy their program of study.

2. "Last year, only 36% of Canadians got an influenza shot. Up to 2000 deaths occur each year that are attributable to influenza. Be sure to get your influenza shot!" Ask appropriate questions to critically analyse this statement.

3. Mr Singh surveyed six of his students on the average number of hours spent on homework per week. He recorded this information along with each student's midterm exam mark.

Time Spent on Homework, T (h/week)	Midterm Exam Mark, M (out of 100)
7.0	65
8.5	71
10.0	80
9.0	75
12.5	91
11.5	85

Then, he graphed the data and used linear regression to find the equation of the line of best fit: $M = 4.67T + 32.25$.



Is it reasonable for Mr Singh to conclude that if all students spent an average of 14.5 hours on homework per week, they would all obtain a midterm exam mark of 100? Explain by performing a critical analysis on this conclusion.

4. For each study, which source of statistics would you consider to be less biased? Are they both biased? Explain.

a) The Joint Canadian Tanning Association or Health Canada on the safety of indoor tanning.

b) Statistics Canada or a television news program on the overall state of the economy.

c) The Ontario Teachers Federation or a high school student on the importance of education.

5. A magazine stated that based on a study in 2007, 76% of Canadians 12 years of age and older use the Internet regularly, while 94% of Canadians 12 to 17 years of age use the Internet regularly.

a) What relationship is being described with the use of statistics?

b) Does this relationship represent descriptive or inferential statistics? Explain.

c) How might this statistical knowledge be applied by a Web site designer?

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