COMMENTS

1. (b) Many students did not understand the concept of one-sided limits and attempted to evaluate the limit numerically with the help of a calculator. Only a partial mark was given in this case.

2. (a) Basic differentiation rules were well understood and correctly applied.
   (b) Some mishaps happened while examinees were applying the chain rule using numerical values of derivatives.

3. Many students had problems with understanding the ideas of an absolute value of a given function and differentiability.

4. This question was intended to be a little more of a challenge. Unfortunately, it became one of the "killers". Marks were not deducted for mistakes in simple algebraic operations. High partial marks were assigned if the students were attempting to optimize the solution in spite of any final mistakes and wrong conclusions.

5. (a) Quite surprisingly, many students were not familiar with the idea of an average velocity.

6. (c) While finding limits (mainly by means of calculators) and performing requested analysis applying the First and Second Derivative Tests were successful, majority of students had problems with sketching a graph of the given function. Quite often, the graphs did not come as a result of analysis in preceding parts of the question and even contradicted them.

7. It appears that the concept of linear approximation was only briefly addressed in the high school classrooms. Only a few students attempted to use it. Therefore, full marks were given even if the examinees used methods other than the requested one.

8. This question was the second toughest. Implicit differentiation was deemed very confusing. Mistakes in calculations (especially when dealing with the powers) did not affect the marks assigned.

9. The answers showed a distinct polarity: either a perfect application of logarithmic differentiation or an unsuccessful attempt at using the quotient rule.

10. Computational mistakes were ignored if the examinee could set up the equation and subsequently demonstrated understanding of related rates.

11. Since the differential equation of this problem was outside the usual curriculum, full marks were given if the students replaced the integral by more familiar, simpler ones and obtained reasonable solutions to the initial value problem so obtained.

12. The majority of examinees successfully resolved the ambiguity in the picture (due to the lack of appropriate shading) by identifying their own region and finding its area. Full marks were given for any reasonable results. Among typical mistakes one could mention identifying the "upper" and lower" curve in the integrand (if such region was chosen by examinees).

13. Generally, students showed a good understanding of the concept of antidifferentiation. Common mistakes included missing constants and wrong signs in front of trigonometric functions upon antidifferentiation.

14. Quite well done.

15. Although it was not intended as a trick question, this was the one which students found most difficult. The examiners were quite surprised by the outcome since exactly this problem along with its solution is explicitly mentioned in the description of the curriculum at http://www.bced.gov.bc.ca/irp/. Students were awarded partial marks for any reasonable effort although many did not know where to start.