# Chapter 1: Determine Average Rate of Change

Studying Tips: you can basically treat AROC as the linear function you learned in grade nine. The entire calculation process is the same as the equation of the slope. The questions from this chapter are very easy and usually appear on tests as 1 mark questions; simply make sure to read the questions carefully so you don't make careless mistakes. On a test, teachers may ask you to find the AROC of a complex function to increase the level of difficulty. Such questions may be worth up to 3 marks.

# Chapter 2: Estimating Instantaneous Rate of Change

Studying Tips: teachers may ask you to find the IROC using all three kinds of methods; be sure to know how to use all of them. When estimating the IROC, make sure to strictly follow your teacher’s requirement on how many decimal points you have to use for the difference quotient. IROC questions are the most frequently asked questions on tests. They range from 1 to 5 marks and can be tested in the form of 1) MC 2) determining IRCO for a certain function 3) word problems and 4) find the equation of a tangent line. The reason why teachers emphasize IROC is because they want to prepare you for calculus.

# Chapter 3a: Rates of Change in Polynomial Functions

Studying Tips: we recommend you to focus on the word problems for the ROC of these functions. Generally, the calculation portion of these chapters are rather simple as it’s mainly substitution; the key is to understand what the word problems are asking you to solve for. During the test, we recommend you check your calculations on a piece of scrap paper to make sure you don’t make careless mistakes. Word problems from these chapters are usually worth 4 marks and make up half of the test.

# Chapter 3b: Rates of Change in Rational Functions

# Chapter 3c: Rates of Change in Trig Functions

# Chapter 3d: rates of change in Exponential and Logarithmic Functions

# Chapter 4: Using Rates of Change to create a Graphical model

Studying Tips: this chapter is very simple; questions from this chapter usually appear on tests as 1) communication questions and 2) graphing questions. In terms of the graphing questions, we recommend you to dissect the questions by identifying what each element represents on a graph. In terms of the communication questions, we recommend you citing the exact definition for a certain concept if you are asked to explain something related to that concept.

# Chapter 5: Solving Problems with Rates of Change

Studying Tips: the key of this chapter is the “solving for a variable” questions. These questions are usually worth 5 marks and are not as straightforward as the questions you encounter in previous chapters. Be sure to check your answer using substitution.