# Unit 4: Curve Sketching

## Chapter 1: Increasing and Decreasing Functions

Studying Tips: this is a review for the interval chart you learned in MHF4U. The concepts in this unit will most likely not be tested independently; they will be asked in the context of the complex combo questions.

## Chapter 2: Critical Points

Studying Tips: this chapter introduces the second important element of curve sketching. Teachers can test your knowledge on critical points using various types of questions: 1) graphing 2) determining variable 3) combo questions. Again, this is a relatively easy concept in this unit and is often tested in context if the complex combo questions.

## Chapter 3: Vertical and Horizontal Asymptotes

Studying Tips: the three types of asymptotes are not new concepts as they are previously introduced in MHF4U. Make sure that you are not only able to identify the three types of asymptotes, but also able to create a function based on the given characteristics. Most of the time, asymptote questions can be worth 1- 3 marks depending on the complexity of the function itself; they are usually tested in the context of a lengthy, complex problem.

## Chapter 4: Concavity and Point of Inflection

Studying Tips: these two concepts are newly introduced in this unit. As long as you fully grasp the concept of first and second derivatives, this section should be relatively easy for you. After finishing up this chapter, we recommend you review all three previous chapters in preparation for the next chapter.

## Chapter 5: An Algorithm for Curve Sketching

Studying Tips: this chapter is a combination of all previous chapters. Essentially, you will be asked to identify all the key elements of a function you have learned and organize using a comprehensive chart. The chart, although seemingly overwhelming, is not too difficult. We recommend you to take a breath, identify each element of the chart, and assemble all the elements. A chart question is usually worth 10-12 marks.

Unit Studying Tips:

* The unit test is usually out of 40-50 marks.
* Do not only study the chart question! Teachers will not put more than one big question like that on the test. Make sure to study each concept individually as the test will mostly consist of the 4 - 5 mark combo questions.
* Create a list of questions that you are least comfortable with, and study them right before the test.
* Test questions are likely the modified versions of your homework and worksheets.
* Try our practice test without looking at the answers; if you can score 80% and above on our practice test, you most likely will do well on your real test.

During the Test:

* Read all questions carefully; make sure to check for involuntary mistakes.
* Check over your work as many times as possible - there is no rush to hand in your work early.