# Chapter 1: Exploring Polynomials

Studying Tips: This chapter introduces you to the basics of polynomial functions. This chapter does not have major concepts besides showing you what these functions look like.

# Chapter 2: Characteristics of Polynomial Functions

Studying Tips: This chapter is very important as it fully explains the properties of polynomial functions. The concepts in chapter will recur throughout the unit. While studying, we recommend you to create a chart that outlines all the characteristics of a cubic/quartic function; a chart can be a more effective way to organize all your notes and show a comparison between a cubic and quartic function. On the unit test, teachers usually ask straightforward “characteristics” questions that are worth 1 mark.

# Chapter 3: Characteristics of Factored Form

Studying Tips: there are two purposes of this chapter: 1) to help you graph a polynomial function and 2) explain the fundamental concepts you need to know before learning how to factor a cubic or quartic function. Make sure that you are able to create an equation of a polynomial function based on the zeroes that are given to you. Teachers don’t test these kinds of questions often as they tend to focus more on factoring - a concept you will learn in later chapters.

# Chapter 4: Transformation of Cubic and Quartic Functions

Studying Tips: know your mapping rule. Whenever you encounter a transformation question, we recommend you to use the mapping rule to help you find new coordinates. Also, make sure to be able to graph the parent function and its transformations on the same cartesian plane. Transformation/graphing questions are usually worth 5 marks.

# Chapter 5: Dividing Polynomials

Studying Tips: We know that the synthetic method might be the easier way to divide… but teachers most likely will ask you to do at least one division question using long division. Straightforward division questions are worth only 2 marks; teachers might tweak the questions by asking you to find the dividend, given the quotient and the divisor. The tweaked questions may be worth up to 6 marks. Make sure to do a sufficient amount of practice questions to get comfortable with both methods of division.

# Chapter 6: Factoring Polynomials

Studying Tips: this chapter is mostly based on the previous chapter. The only new concept from this chapter is to identify which functions are factorable. When doing the factorability test, always start with the smallest factor; teachers will not make you try every factor before getting the right answer. Factoring questions can be worth up to 6 marks depending on the function’s complexity.

# Chapter 7: Sums/Differences of Cubes

Studying Tips: memorizing the formulas is the key! If you think you will forget the formula during the test, write them down on a piece of scrap paper immediately when the test is given to you. Always do the challenging homework questions in this unit; teachers will most likely test you on the difficult versions of these questions. Questions from this chapter may be worth 2-3 marks. Here is a little trick for you to memorize the formula:

Sum: + - +

Difference: - + +