

2020 MA3 Week 7 Investigation

This week's investigation is to connect the numeric and algebraic concepts of **arithmetic** and **geometric** sequences to their graphical representations. You may complete this on a separate piece of paper and attach it to the booklet when you hand it in.

Question 1: State the **numeric** sequence of 3 different **arithmetic** and **geometric** sequences (these can be from the questions you have completed, or you can come up with your own). Make sure that one of the arithmetic sequences has a negative difference and one of the geometric sequences has a fraction ratio.

Question 2: State the **algebraic** rule for each sequence. (REMEMBER to simplify fully).

Question 3: **Graph** each sequence, where the x-axis is the term number, and the y-axis is the value of the term. (Consider using an online calculator such as www.desmos.com/calculator or Google sheets)

Question 4: What do you notice about these graphs? Make a general comment that describes the graphical representation of an **arithmetic** and a **geometric** sequence.