YEAR 13 – MATHEMATICS (Week 3)

Subject	**Mathematics**
Class/ Section	**Year 13 – Batch A, B and C**
Week	**12th September to 16th September 2021**
Work send to students by	**Group email / Google classroom / Zoom**
Total number of lessons per week	**3**
Units	**Pure Mathematics – Year 2** **Chapter 2 – Functions and graphs** **Chapter 3 – Sequences and Series**
Lessons 1 –Live Zoom lesson	**2.5 – y = lf(x)l and y = f(lxl)** **2.6 – Combining transformation.** **Learning objective** – **To sketch the graphs of the modulus functions y = |f(x)| and y = f(|x|). To apply a combination of two (or more) transformations to the same curve.** **Intended Learning Outcomes** --Students will be able to sketch the graph and find modulus of simple functions. --Students will be able to sketch the graph of y = |f(x)| and y = f(|x|) of more complex functions. --Students will be able to solve exam style questions using combinations of Transformations of a function.
Tasks/Activities	The Teacher would introduce sketching of modulus functions and compare it with real life examples. Students will explore exam style questions and interpret each part of them graphically.
Lessons 2 –Live Zoom lesson	**2.7 – Solving Modulus Problems** **Mixed Exercise 2** **Learning objective** – **To transform the modulus functions and solve problems.** **Intended Learning Outcomes** --Students will be able to use the combination of transformations together with lf(x)l and f(lxl) and an understanding of domain and range to solve problems. -- Students will be able to state the range of transformed modulus function and how to solve them. -- Students will be able to do the problems from the mixed exercise of Chapter 2 – Functions and graphs.
Tasks/Activities	The Teacher explains about the transformation of modulus functions and make students to understand by giving real life examples related to transformation of modulus functions. Students will be able to understand the domain and trange of transformed modulus functions.

Lessons 3 –Live Zoom lesson	**3.1 – Arithmetic Sequences** **3.2 – Arithmetic Series** **Learning objective** – **To find the nth term of an arithmetic sequence and to prove and use the formula for the sum of the first n terms of an arithmetic series.** **Intended Learning Outcomes** --Students will be able to if the difference between two consecutive terms is positive, then the sequence is increasing, if the difference between two consecutive terms is negative, then the sequence is decreasing and if the difference between two consecutive terms is not constant, then the sequence is not arithmetic and use the formula to find the nth term of the arithmetic sequence. --Students will be able to understand the definition of series by identifying the difference from sequence and series and to find the sum of all terms in the series by using a formula and to easily find the sum of series using a formula $S_n = (n/2)(a+l)$, where a is the first term and l is the last term.
Tasks/Activities	The Teacher would recall arithmetic sequences and will make students to understand about the arithmetic series. Students will explore more examples and the implementation of arithmetic series in real life.
Assessment Criteria/ Essential questions	To complete the questions assigned from the Textbook (pdf) in their notebook. Students will be put in break out rooms during Zoom lesson to encourage collaborative learning. Essential Question that are according to the Pearson edexcel specification C3 old specification Jan 2006 - Question 1 C3 old specification Jan 2008 - Question 4 C1 old specification June 2014 - Question 5 C1 old specification June 2014 - Question 8 For example, assessment objectives expected by the board with respect to the above question is listed below. AO1: select and correctly carry out routine procedures AO2: use mathematical language and notation correctly AO3: translate problems in mathematical and non-mathematical contexts into mathematical processes
Resources	1. Power point presentation 2. Pure Mathematics Year 2 3. https://www.physicsandmathstutor.com/ 4. https://www.drfrostmaths.com/ 5. https://www.examsolutions.net/