مدرسة القديسة مريم الكاثوليكية الثانوية - دبي

ST. MARY'S CATHOLIC HIGH SCHOOL, DUBAI

YEAR 13 – MATHEMATICS (Week 2)

Subject	**Mathematics**
Class/ Section	**Year 13 – Batch A, B and C**
Week	**5th September to 9th 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 1 – Proof by contradiction** **Chapter 2 – Functions and graphs**
Lessons 1 –Live Zoom lesson	**1.1 - Proof by contradiction** **2.1 – The modulus functions** **2.2 – Functions and Mapping** **Learning objective** – **To use proof by contradiction to prove true statements. To understand and use the modulus functions. To understand mapping and functions, and use domain and range.** **Intended Learning Outcomes** --Students will be able to understand that a contradiction is a disagreement between two statements, which means that both cannot be true. Proof by contradiction is a powerful technique. -- Students will be able to find the y values when the x values of the modulus functions are given and be able to sketch the graph of modulus functions. -- Students will be able to solve modulus equations algebraically and find the domain of the given function. -- Students will be able to solve exam style questions involving modulus inequalities algebraically and graphically and find the domain and range of given functions.
Tasks/Activities	The Teacher would introduce proof by contradiction to prove true statements. Teacher will also make the students understand about the modulus functions. Students will explore the concepts with examples and interpret each part of the proofs and modulus functions.

Lessons 2 –Live Zoom lesson	**2.3 – Composite functions** **<u>Learning objective</u> – To combine two or more functions to make a composite function.** **<u>Intended Learning Outcomes</u>** --Students will be able to find simple composite functions. -- Students will be able to find composite functions involving reciprocal and linear functions. -- Students will be able to find composite functions involving modulus and exponential functions.
Tasks/Activities	The Teacher would introduce about composite functions. Students will be able to understand about composite functions using examples and solve related problems.
Lessons 3 –Live Zoom lesson	**2.4 – Inverse functions** **<u>Learning objective</u> – To know how to find the inverse of a function graphically and algebraically.** **<u>Intended Learning Outcomes</u>** --Students will be able to find inverse functions. -- Students will be able to find the inverse of quadratic and square root functions. -- Students will be able to find the domain and the range of inverse functions.
Tasks/Activities	The Teacher will make the students understand the inverse functions algebraically and graphically. Students will explore with examples and interpret each part of them graphically.
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 Pure Paper 2 Specimen - Question 11(b)(c) Pure Paper 2 Specimen - Question 4 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/