YEAR 12 – MATHEMATICS (Week 27)

Subject	**Mathematics (Pure Math & Stats)**
Class/ Section	**Year 12 – Batch 1, 2 and 3**
Week	**28th February – 4th March 2021**
Work send to students by	**Group email / Google classroom / Zoom**
Total number of lessons per week	**6**
Units	**PURE MATH- Ch12(Differentiation)** **12.9 (Stationary points)** **12.10(Sketching gradient functions)** **12.11 (Modelling with differentiation)** **STATISTICS – Book 2 – Ch 1 & 2**
Lessons 1 –Live Zoom lesson **Tasks** **Resources**	**PURE MATH- Ch12(Differentiation)** **12.9 (Stationary points)** **Learning objective** : Use the derivative to find stationary points of functions and determine their nature. **Intended Learning Outcomes** - Students will be able determine whether a stationary point is a local maximum, a local minimum or a point of inflection by looking the gradient of the curve on either side. 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. 1. Power point presentation 2. Pure Mathematics Year 1 / AS 3. https://www.physicsandmathstutor.com/ 4. https://www.drfrostmaths.com/ 5. https://www.examsolutions.net/

Lesson 2 - Live Zoom lesson **Tasks** **Resources**	**PURE MATH- Ch12(Differentiation)** **12.10(Sketching gradient functions)** **12.11 (Modelling with differentiation** **Learning objective** - To sketch the gradient function of a given function .To model real life situations with differentiation . **Intended Learning Outcomes** – Students will be able to use the features of a given function to sketch the corresponding gradient function .Students will be able to use the derivative to model lots of real-life situations involving rate of change. 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. 1. Power point presentation 2. Pure Mathematics Year 1 / AS 3. https://www.physicsandmathstutor.com/ 4. https://www.drfrostmaths.com/ 5. https://www.examsolutions.net/
Lessons 3–GOOGLE CLASS ROOM **Tasks** **Resource**	Book 1 pure math **To do problems involving Differentiation** **Intended Learning Outcome:** **By the end of the lesson students will be able to do problems from the Mixed exercise – Chapter 12 Pages 282to 285. Questions: 1,9,12,18,20.29** **Work will be assigned in Google Classroom.** **Text Book :** Pure Mathematics Year 1 / AS
Lessons 4 –Live Zoom lesson	Book 2 Chapter 1: Regression, correlation and hypothesis testing. 1.3: Hypothesis testing for zero correlation. **Learning objective** – To carry out a hypothesis test for zero correlation. **Intended Learning Outcomes** --Students will be able use a hypothesis test to determine whether the product moment correlation coefficient, r, for a particular sample indicates that there is likely to be a linear relationship within the whole population. If you want to test for whether or not the population PMCC, ρ, is either greater than zero or less than zero you can use a one – tailed test. For a one – tailed test use either: $H_0 : \rho = 0$, $H_1 : \rho > 0$ or

Tasks **Resource**	$H_0 : \rho = 0$, $H_1 : \rho < 0$. If you want to use whether the population PMCC, ρ, is not equal to zero you need to use a two-tailed test: For a two-tailed test use: $H_0 : \rho = 0$, $H_1 : \rho \neq 0$ 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. 1. Power point presentation 2. Statistics and Mechanics Year 2 3. https://www.physicsandmathstutor.com/ 4. https://www.drfrostmaths.com/ 5. https://www.examsolutions.net/a-levelmaths/edexcel/edexcel-a-level-maths-past-papers/
Lessons 5 –Live Zoom lesson **Tasks** **Resource**	Book 2 Chapter 2: 2.1 – Set Notation **Learning objective** – To understand set notation in probability. **Intended Learning Outcomes** --Students will be able to use set notation to describe events within a sample space. This can help you abbreviate probability statements. The event A and B can be written as A ∩ B. The '∩' symbol is the symbol for intersection. The symbol ε is used to represent the whole sample space. The intersection of A and B is written as A ∩ B. If A and B are independent, P(A ∩ B) = P(A) x P(B). The events A or B can be written as A ∪ B. The '∪' symbol is the symbol of union. The union of A and B is written as A ∪ B. If A and B are mutually exclusive then, P(A ∪ B) = P(A) + P(B). The event not A can be written as A'. This is also called the complement of A. P(A') = 1 – P(A). Events A and A' are always mutually exclusive. 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. 1. Power point presentation 2. Statistics and Mechanics Year 2 3. https://www.physicsandmathstutor.com/ 4. https://www.drfrostmaths.com/ 5. https://www.examsolutions.net/a-levelmaths/edexcel/edexcel-a-level-maths-past-papers/
Lessons 6 –Live Zoom lesson	Book 2 Chapter 2: 2.2 – Conditional Probability **Learning objective** – To understand conditional probability. **Intended Learning Outcomes** --Students will be able to understand that probability of an event can

Tasks **Resource**	change depending on the outcome of a previous event. Situations like this can be modelled using conditional probability. The probability that B occurs given that A has already occurred is written as P(B| A). Similarly, P(B| A') describes the probability of B occurring given that A has not occurred. For independent events, P(A| B) = P(A| B') = P(A), and P(B| A) = P(B| A') = P(B). We can solve some problems involving conditional probability by considering a restricted sample space of the outcomes where one event has already occurred. 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. 1. Power point presentation 2. Statistics and Mechanics Year 2 3. https://www.physicsandmathstutor.com/ 4. https://www.drfrostmaths.com/ 5. https://www.examsolutions.net/a-levelmaths/edexcel/edexcel-a-level-maths-past-papers/