YEAR 12 – MATHEMATICS (Week 25)

Subject	Mathematics (Pure Math & Stats)
Class/ Section	Year 12 – Batch 1, 2 and 3
Week	14th February – 18th February 2021
Work send to students by	Group email / Google classroom / Zoom
Total number of lessons per week	6
Units	**PURE MATH- Ch12(Differentiation)** **12.1 (Gradient of curves)** **12.2(Finding the derivative)** **12.3 (Differentiating x^ n)** **STATISTICS – Book 1 - Ch 7** **- Book 2 – Ch 1**
Lessons 1 –Live Zoom lesson Tasks Resources	**PURE MATH- Ch12(Differentiation)** **12.1 (Gradient of curves)** **12.2(Finding the derivative)** **Learning objective** : To find the derivative ,f'(x),or d y/d x, of a simple function. Use the derivative to solve problems involving gradients, tangents and normals. **Intended Learning Outcomes** - Students will be able to use a tangent to find the gradient of a curve at any point on the curve. Students will be able to find the exact gradient of a curve at a given point . 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	**PURE MATH- Ch12(Differentiation)** **12.3 (Differentiating x^n)** **Learning objective** - To find the derivative ,f'(x),or d y/d x, of a simple function. Use the derivative to solve problems involving gradients, tangents and normals.
Tasks	**Intended Learning Outcomes** – Students will be able to use the definition of the derivative to find an expression for the derivative of x^n where n is any number.
Resources	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 - Live Zoom lesson **Task** **Resources**	**To do problems involving Vectors.** **Intended Learning Outcome:** **By the end of the lesson students will be able to do problems from the Mixed exercise – Chapter 11 (Vectors). Pages 251 - 253.** **Work will be assigned in Google Classroom.** **Text Book :** Pure Mathematics Year 1 / AS
Lessons 4 –Live Zoom lesson **Tasks**	**7.4 – Two-tailed tests** **Learning objective** – To carry out a two-tailed test for the proportion of the binomial distribution and interpret the results. **Intended Learning Outcomes** --Students will be able to understand that a two tailed test is used when it is thought that the probability has changed in either direction. For a two tailed test, half the significance level at the end you are testing. You need to know which tail of the distribution you are testing. If the test statistic is $X \sim B(n, p)$ then the expected outcome is np. If the observed value is higher than the expected value, then consider $P(X \geq x)$. 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

Resource	2. Statistics and Mechanics Year 1 / AS 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	Book 2 Chapter 1: Regression, correlation and hypothesis testing. 1.1: Exponential models **<u>Learning objective</u>** – To understand exponential models in bivariate data. **<u>Intended Learning Outcomes</u>** --Students will be able to understand that regression lines are used to model linear relationship between two variables. For data that can be modelled by a relationship of the form $y = ax^n$, we need to code the data using $Y = \log y$ and $X = \log x$ to obtain a linear relationship. If $y = ax^n$ for constants a and n then $\log y = \log a + n \log x$, For the data that can be modelled by an exponential relationship of the form $y = ab^x$, we need to code the data using $Y = \log y$ and $X = x$ to obtain a relationship. If $y = ab^x$ for constants k and b then $\log y = \log k + x \log b$.
Tasks	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.
Resource	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 1: Regression, correlation and hypothesis testing. 1.2: Measuring Correlation **<u>Learning objective</u>** – To use a change of variable to estimate coefficients in an exponential model. **<u>Intended Learning Outcomes</u>** --Students will be able to understand that we can calculate quantitative measures for the strength and type of linear correlation between two variables. One of these measures is known as product moment correlation coefficient. The product moment correlation coefficient describes the linear correlation between two variables. It can take values between -1 and 1. If $r = 1$, there is perfect positive linear correlation. If $r = -1$, there is perfect negative linear correlation. To complete the questions assigned from the Textbook (pdf) in their

Tasks	notebook. Students will be put in break out rooms during Zoom lesson to encourage collaborative learning.
Resource	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/