YEAR 12 – MATHEMATICS (Week 13)

Subject	**Mathematics (Pure Math &Stat)**
Class/ Section	**Year 12 – Batch 1, 2 and 3**
Week	**22nd November – 26th November 2020**
Work send to students by	**Group email / Google classroom / Zoom**
Total number of lessons per week	**6**
Units	**PURE MATH- Ch 8(The binomial expansion)** **8.5 –Binomial Estimation** **Ch10(Trigonometric Identities and equations)** **10.1 (Angle in all four quadrants)** **10.2(Exact values of trigonometric ratios)** **STATISTICS – Ch 6(Statistical distributions)** **6.2 - The binomial distribution** **6.3 - Cumulative probabilities**
Lessons 1 –Live Zoom lesson **Tasks** **Resources**	**PURE MATH- Ch 8(The binomial expansion)** **8.5- Binomial Estimation** **Learning objective** : To make approximations using the binomial expansions. **Intended Learning Outcomes** - Students will be able to make approximations using the binomial expansions. . 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- Ch10(Trigonometric Identities and equations)** **10.1 (Angle in all four quadrants)** **10.2(Exact values of trigonometric ratios)** <u>**Learning objective**</u> - to calculate the sine, cosine and tangent of any angle. -to know and use exact trigonometric ratios for 30deg,45deg,60 deg <u>**Intended Learning Outcomes**</u> – Students will be able to use unit circle with its centre and the orgin to understand the trigonometric ratios. - Students will be able to find sin, cos and tan of 30deg,45deg,60 deg exactly using triangles .
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.
Resources	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	**To do problems involving chapter 9 Trigonometric Ratios.** **Intended Learning Outcome: By the end of the lesson students will be able to do problems from the Mixed Exercise – Chapter 9 (Trigonometric Ratios.). Pages 199 and 200. Questions: 7, 9, 11, 14, 15, 16 and 18.**
Task	**Work will be assigned in Google Classroom.**
Resources	**Text Book :** Pure Mathematics Year 1 / AS
Lessons 4 –Live Zoom lesson	**STATISTICS – 6.2 The binomial distribution** <u>**Learning objective**</u> – To understand the binomial distribution as a model and comment on appropriateness. <u>**Intended Learning Outcomes**</u> --Students will be able to model a random variable X with a binomial distribution, B(n,p) if: there are a fixed number of trials, n; there are two possible outcomes (success and failure); there is a fixed probability of success, p and the trials are independent of each other.
Tasks	--Students will be able to understand that a random variable X has the binomial distribution B(n,p) then its probability mass function is given by $P(X = r) = (n, r) p^r(1-p)^{n-r}$, n is sometimes called the index and p is sometimes called the parameter.

Resource	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 1 / AS 3. https://www.physicsandmathstutor.com/ 4. https://www.drfrostmaths.com/ 5. https://www.examsolutions.net/a-level-maths/edexcel/edexcel-a-level-maths-past-papers/
Lessons 5 & 6 –Live Zoom lesson	**STATISTICS - 6.3 Cumulative probabilities.** **Learning objective** – To calculate cumulative probabilities for the binomial distribution. **Intended Learning Outcomes** --Students will be able to understand that a cumulative probability function for a random variable X is the sum of all the individual probabilities up to and including the given value of x in the calculation for $P(X \leq x)$. For the binomial distribution $X \sim B(n,p)$ there are tables in the formula book giving $P(X \leq x)$ for various values of n and p. You can also use the binomial cumulative probability function on your calculator to find $P(X \leq x)$ for any values of x, n and p.
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 1 / AS 3. https://www.physicsandmathstutor.com/ 4. https://www.drfrostmaths.com/ 5. https://www.examsolutions.net/a-level-maths/edexcel/edexcel-a-level-maths-past-papers/