YEAR 13 – MATHEMATICS (Week 9)

Subject	Mathematics
Class/ Section	Year 13 – Batch A, B and C
Week	25th October to 28th October 2020
Work send to students by	Group email / Google classroom / Zoom
Total number of lessons per week	3
Units	**Pure Mathematics – Year 2** **Chapter 6 – Trigonometric Functions** **Chapter 7 – Trigonometry and Modelling**
Lesson 1 – Live Zoom lesson **Tasks** **Resources**	**6.4 – Trigonometric Identities** **6.5 – Inverse trigonometric functions** **Learning objective** – **To prove and use $\sec^2 x \equiv 1 + \tan^2 x$ and $\csc^2 x \equiv 1 + \cot^2 x$** **To understand and use inverse trigonometric function and their domain and ranges.** **Intended Learning Outcomes** --Students will be able to use the identity $\sin^2 x + \cos^2 x \equiv 1$ to prove the following identities. • $1 + \tan^2 x \equiv \sec^2 x$ • $1 + \cot^2 x \equiv \csc^2 x$ You can use the unit circle definitions of sin and cos to prove the identity $\sin^2 x + \cos^2 x \equiv 1$. --Students will be able to understand that the inverse function of $\sin x$ is called arcsin x. The domain of y = arcsin x is $-1 \leq x \leq 1$. The range of y = arcsin x is $-\pi/2 \leq$ arcsin $x \leq \pi/2$ or $-90° \leq$ arcsin $x \leq 90°$ 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 2 3. https://www.physicsandmathstutor.com/ 4. https://www.drfrostmaths.com/ 5. https://www.examsolutions.net/

Lessons 2 –Live Zoom lesson	**7. Trigonometry and Modelling** **7.1 - Addition formula** **7.2 – Using the angle addition formulae** <u>**Learning objective**</u> – **To prove and use the addition formulae.** <u>**Intended Learning Outcomes**</u> --Students will be able to understand the addition formulae of sine, cosine and tangent. $\text{Sin}(A + B) \equiv \text{Sin }A\text{ Cos }B + \text{Cos }A\text{ Sin }B$, $\text{Sin}(A+B) \equiv \text{Sin }A\text{ Cos }B - \text{Cos }A\text{ Sin }B$, $\text{Cos}(A + B) \equiv \text{Cos }A\text{ Cos }B - \text{Sin }A\text{ Sin }B$, $\text{Cos}(A - B) \equiv \text{Cos }A\text{ Cos }B + \text{Sin }A\text{ Sin }B$, $\text{Tan}(A + B) \equiv (\tan A + \tan B)/(1 - \tan A\tan B)$, $\text{Tan}(A - B) \equiv (\tan A - \tan B)/(1 + \tan A\tan B)$. The addition formula can be used to find exact values of trigonometric functions of different angles.
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.
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Lesson 3–Live Zoom lesson	**7.3 – Double angle formulae.** <u>**Learning objective**</u> – **To understand and use the double angle formula.** <u>**Intended Learning Outcomes**</u> --Students will be able to use the addition formula to derive the following double angle formula. $\text{Sin }2A \equiv 2\text{ Sin }A\text{ Cos }A$ $\text{Cos }2A \equiv \text{Cos}^2 A - \text{Sin}^2 A \equiv 2\text{Cos}^2 A - 1 \equiv 1 - 2\text{ Sin}^2 A$ $\text{Tan }2A \equiv (2\tan A)/(1 - \tan^2 A)$
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.
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