Subject	Mathematics
Class/ Section	Year 13 – Batch A, B and C
Week	31st January to 04th February 2021
Work send to students by	Group email / Google classroom / Zoom
Total number of lessons per week	3
Units	Pure Mathematics – Year 2 Chapter 11 – Integration
Lesson 1 – Live Zoom lesson	**11.1 – Integrating standard functions** **11.2 – Integrating** $f(ax + b)$ **Learning objective** – **To integrate standard mathematical functions including trigonometric and exponential functions and use the reverse of the chain rule to integrate functions of the form f(ax+b)** **Intended Learning Outcomes** --Students will be able to understand that integration is the inverse of differentiation. You can use the knowledge of derivatives to integrate. $\int 1 \, dx = x + C.$ $\int a \, dx = ax + C.$ $\int x^n \, dx = ((x^{n+1})/(n+1)) + C \; ; \; n \neq 1.$ $\int \sin x \, dx = - \cos x + C.$ $\int \cos x \, dx = \sin x + C.$ $\int \sec^2 dx = \tan x + C.$ $\int \csc^2 dx = -\cot x + C.$ $\int \sec x (\tan x) \, dx = \sec x + C.$
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 2 3 https://www.physicsandmathstutor.com/ 4 https://www.drfrostmaths.com/ 5 https://www.examsolutions.net/

Lessons 2 –Live Zoom lesson	**11.3 – Using trigonometric identities** **<u>Learning objective</u>** – **To use trigonometric identities in integration.** **<u>Intended Learning Outcomes</u>** --Students will be able to use trigonometric identities to integrate expressions. This allows an expression that cannot be integrated to be replaced by an identical expression that can be integrated.
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 2 3. https://www.physicsandmathstutor.com/ **4.** https://www.drfrostmaths.com/ **5.** https://www.examsolutions.net/
Lesson 3–Live Zoom lesson	**11.4 – Reverse chain rule** **<u>Learning objective</u>** – **To use reverse of the chain rule to integrate more complex functions.** **<u>Intended Learning Outcomes</u>** --Students will be able to understand that if a function can be written in the form $k\,f'(x)/f(x)$, you can integrate it using the reverse of the chain rule for differentiation. To integrate expressions of the form $\int k\,f'(x)/f(x)\,dx$, try $\ln|f(x)|$ and differentiate to check, and then adjust any constant. To integrate an expression of the form $\int k\,f'(x)\,(f(x))^n\,dx$, try $(f(x))^{n+1}$ and differentiate to check, and then adjust any constant.
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 2 3 https://www.physicsandmathstutor.com/ 4 https://www.drfrostmaths.com/ 5 https://www.examsolutions.net/