# Year 12 Mathematics Advanced Assessment Task 1 – 2024

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| **TOPIC**: Transformations of graphs | **MARKS:**39 Marks | |
| **SUBMISSION REQUIREMENTS:**<br>Term 4 – Week 9 - Friday, **13th December 2024**<br>This assignment is to be handed to your class teacher as you enter the room Period 2 or submitted electronically before this time. | **WEIGHTING:**<br>20 % | **COMPONENTS:**<br>Concepts, Skills & Technologies 10%<br>Reasoning & Communication 10% |

**TASK DESCRIPTION:**

This task explores the modelling of transformations of functions using trigonometric functions. It consists of three parts:

**Part 1**: Sound Waves – *4 Marks*

**Part 2**: Finding hidden shapes – *16 Marks*

**Part 3**: Exponential Modelling – *19 Marks*

Students will complete the assignment on A4 paper and submit this document for marking on or before the due date. Students are to take screen shots of any work done on the computer and add this to their assignments. Alternately you may submit your assignment digitally via email to andrew.dye@det.nsw.edu.au or through Canvas.

**OUTCOMES TO BE ASSESSED:**

**MA12-1** : **uses** detailed algebraic and graphical techniques to critically construct, **model** and evaluate arguments in a range of familiar and unfamiliar contexts

**MA12-5** : **applies** the concepts and techniques of periodic functions in the solution of problems involving trigonometric graphs.

**MA12-9 :** Chooses and **uses** appropriate technology effectively in a range of contexts, models and applies critical thinking to recognise appropriate times for such use.

**DIRECTIONAL VERBS:**

**Apply** – use, utilise, employ in a particular situation
**Calculate** – ascertain, evaluate, determine from given facts, figures or information
**Model** – simplified description of a system or process to assist calculations and predictions