



## Year 12 Mathematics Extension 1 Assessment Task 1 – 2024

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| <b>TOPIC:</b> Vectors  | <b>MARKS:</b> 16 Marks        |  |
| <b>SUBMISSION REQUIREMENTS:</b><br>Term 4 – Week 9 - Wednesday, <b><u>11th December 2024</u></b><br>This assignment is to be handed to your class teacher as you enter the room Period 0 or submitted electronically before this time. | <b>WEIGHTING:</b><br><br>20 % | <b>COMPONENTS:</b><br><br>Concepts, Skills & Technologies<br>Reasoning & Communication<br><br>10%                      10% |

### TASK DESCRIPTION:

This task explores the modelling of projectile motion in a variety of situations using vectors. It consists of four parts:

**Part 1:** Shot put – 3 Marks

**Part 2:** Developing initial conditions – 4 Marks

**Part 3:** Modelling a jump on another planet – 4 Marks

**Part 4:** Evaluation – 5 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](mailto:andrew.dye@det.nsw.edu.au) or through Canvas.

### OUTCOMES TO BE ASSESSED:

**ME12-2** : applies concepts and techniques involving vectors and projectiles to solve problems

**ME12-6** : chooses and uses appropriate technology to solve problems in a range of contexts

**ME12-7** : evaluates and justifies conclusions, communicating a position clearly in appropriate mathematical forms

### DIRECTIONAL VERBS:

**Apply** – use, utilise, employ in a particular situation

**Calculate** – ascertain, evaluate, determine from given facts, figures or information

**Communicates** – Explains, connects, relates cause and effect; make the relationships between things evident; provide why and/or how using appropriate terminology, diagram and/or symbols

**Solve** – find an answer to, explanation for, or means of effectively dealing with a problem

**Justify** – to support an answer