Year 12 Mathematics Extension 1

Assessment Task 2 - 2024

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| **TOPIC**:

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|  Binomial Distributions and Mathematical Induction  |
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 | **MARKS:** 30 marks |
| **SUBMISSION REQUIREMENTS:** Term 1 – Week 7 - Written test to be completed in class on Wednesday 13th March 2024 (Period 0) | **WEIGHTING:**  20%  |
| **OUTCOMES TO BE ASSESSED:**

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| **ME12-1 Applies** techniques involving proof or calculus to model and **solve** problems. **ME12-5 Applies** appropriate statistical processes to present, analyse and interpret data.  |

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| **Directional Verbs**: **Apply** – Use, utilise, employ in a particular situation **Solve -** find an answer to, explanation for (a problem). |
| **TASK DESCRIPTION**: This task is an in-class written test consisting of: * 5 short answer questions on **Binomial Distributions** totalling **21 marks** of the total marks.
* 3 short answer questions on **Mathematical Induction** totalling **9 marks** of the total marks.

**Time allowed** for the task will be **1 hour.** **A HSC (NESA) formula sheet will be provided.** **No notes or books can be used during the exam.** **Equipment required: Calculator - Ruler - Pen - Pencil - Eraser****ASSESSMENT CRITERIA:** You will be marked on your ability to answer the questions correctly. You are required to show relevant mathematical working, reasoning and/or calculations. You are encouraged to revise the following concepts learnt in class.

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| **Binomial Distribution*** Bernoulli distributions.
* Binomial distributions.
* Mean and Variance of a binomial distribution.
* Sample proportions.
 | **Mathematical Induction*** Proof by MathematicalInduction**.**
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