Year 12 Mathematics Extension 1

Assessment Task 2 - 2024

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