 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Mark: /24

Year 12 Essential Practical Application 1 (Pool Design) marking rubric

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| --- | --- | --- | --- | --- |
|  | A 4 marks | B 3 marks | C 2 marks | D 1 mark |
| Interpret the task and gather the key information | Identifies relevant information from multiple sources or within concentrated sources.   * *Statement that identifies other aspects to be considered* * *Detailed sketch and dimensions included with researched relevant information* | Identifies and links more than one piece of information.   * *Statement that identifies more than one mathematical aspect (Perimeter and Area)* * *Sketch includes compound shape with relevant dimensions included* | Identifies relevant information and chooses the appropriate mathematics to solve a problem in straightforward or familiar situations.   * *Statement that identifies one mathematical aspect (Perimeter or Area)* * *Sketch includes familiar shapes with some dimensions included* | Identifies some relevant information in straightforward or familiar situations.   * *Restates problem* * *No sketch provided* |
| identify the mathematics which could help to complete the task | Chooses the appropriate mathematical techniques to solve a range of problems in unstructured situations. | Chooses the appropriate mathematical and techniques to solve problems in mostly familiar and sometimes unstructured situations. | Plans the solution of real problems in Practical applications when an overview of the mathematical thinking process has been provided. | Sometimes chooses the appropriate mathematics to solve a problem in straightforward or familiar situations. |
|  | A 4 marks | B 3 marks | C 2 marks | D 1 mark |
| analyse information and data from a variety of sources | Incorporates information from multiple sources and demonstrates a systematic approach to accurately solve multi-step problems, including those from unfamiliar situations.   * *Sourced other aspects related to design of pool area* * *Demonstrates a systematic approach to incorporating a changed or unique condition* | Applies information and calculates mostly accurate solutions for multi-step problems.   * *Sourced more than two aspects of design* * *Incorporates some changed conditions that need to be included/modified e.g. researching standard heights, inclusion of gate* | Applies information and calculates mostly accurate solutions for problems in familiar situations involving one or more steps.   * *Sourced one aspect of the design* * *Uses estimations techniques to calculate solution* | Applies information and calculates some accurate solutions for routine and practised problems with one or more steps.   * *No sources accessed* |
|  | A 8 marks | B 6 marks | C 4 marks | D 2 marks |
| apply existing mathematical knowledge and strategies to obtain a solution. | Modifies calculated results or conclusions when conditions are changed.   * *Applies accurately area to calculate accurately the cost of tiling* * *Takes into account other costs of design e.g 10% extra for wastage* | Applies appropriate graphing techniques and determines appropriate scales based on the data.  Incorporates some changed conditions when solving problems in familiar situations.   * *Compound shape with correct calculation of perimeter* * *Compound shape with correct calculation of area* * *Applies area to calculate accurately the cost of tiling* | Applies appropriate graphing techniques.  Rounds to an appropriate level for everyday contexts.   * *Familiar shape with correct calculation of perimeter* * *Familiar shape with correct calculation of area* | Uses appropriate graphing techniques with support. |
|  | A 4 marks | B 3 marks | C 2 marks | D 1 mark |
| verify the reasonableness of the solution | Verifies the reasonableness of solutions and makes adjustments when necessary. | Checks calculated results and makes adjustments where necessary. | Seldom checks results in the light of the original problem. | Rarely, checks results. |
|  | A 4 marks | B 3 marks | C 2 marks | D 1 mark |
| communicate findings in a systematic and concise manner. | Uses accurate mathematical language and expressions to communicate methods and solutions to multi-step problems.  Accesses a comprehensive range of mathematical concepts to validate conclusions which are related to the original question or context.   * *Concise, systematic Mathematical Thinking Process layout* | Accesses a range of mathematical concepts to communicate solutions and justify conclusions which relate to the original question or context, including for some non-routine problems.   * *Clear, systematic Mathematical Thinking Process layout* | Shows working, including intermediate steps and/or expressions entered into a calculator or spreadsheet.  Provides short statements based on straightforward observations which are related to the original question or context.   * *Has concluded findings* * *Neat/Clear structure* | Shows limited working, including some intermediate steps and/or expressions entered into a calculator or spreadsheet.  Provides short statements which may not be related to the original question or context.   * *Findings lack a clear structure* |