**Maths (Advocate: Thiago Viana)**

**P1 Calculate the greatest common divisor and least common multiple of a given pair of numbers.**

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| Link: <https://github.com/matthewsides/Mathematics/blob/master/README.md#01-how-to-calculate-the-greatest-common-divisor-and-least-common-multiple-of-a-given-pair-of-numbers> |
| The evidence is within the README.md of the GitHub repository "Mathematics" and is applicable as the content pertains to the calculation of the GCD and LCM of a given pair of numbers, explaining how, giving examples. |

**P2 Use relevant theory to sum arithmetic and geometric progressions.**

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| Link: <https://github.com/matthewsides/Mathematics/blob/master/README.md#03-algorithm-to-calculate-arithmetic-and-geometric-progression> |
| The evidence for the above criteria can be seen within the txt (notepad) file with C++ code within that shows an relevant theory to sum arithmetic and geometric progressions. Whilst in the README.md documentation under the heading "Algorithm to calculate arithmetic and geometric progressions" more evidence is displayed through a written algorithm not translated into a High-Level-Language but written and detailed in english. |

**P3 Deduce the conditional probability of different events occurring within independent trials.**

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| Link: <https://github.com/matthewsides/Mathematics/blob/master/README.md#06-probability> |
| The deduction of conditional probability of different events occurring within independent trials may be seen within the "Mathematics" Repository under the heading "probability". This constitutes as evidence since it shows instances of deduction to conditional property of different events occurring within independent trials. |

**P4 Identify the expectation of an event occurring from a discrete, random variable.**

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| Link: <https://github.com/matthewsides/Mathematics/blob/master/README.md#02-what-is-the-probability-of-a-random-integer-being-divisible-by-5> |
| This is shown within the repository labeled "Mathematics", in the README.md under the heading "What is the probability of a random integer being divisible by five?", which explains the probability of a random integer being divisible by five, also going into detail as to hoe this is plausible. |

**P5 Identify simple shapes using co-ordinate geometry.**

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| Link: <https://github.com/matthewsides/Mathematics/blob/master/README.md#05-algorithm-to-identify-simple-shapes-using-co-ordinates> |
| The evidence for this criteria may be found under the heading "Algorithm to identify simple shapes" in the GitHub Mathematics repository README.md and the uploaded C++ file "simple-shapes-identifier". This is applicable as the algorithm shows the thought process and flow as to how simple shapes may be identified using co-ordinate geometry, whilst the program itself implements the algorithm and actually identifies simple shapes using co-ordinate geometry. |

**P6 Determine shape parameters using appropriate vector methods.**

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| Links: <https://github.com/matthewsides/Mathematics/blob/master/README.md#determine-shape-parameters-using-appropriate-vector-methods>  <https://github.com/matthewsides/Mathematics/blob/master/README.md#7-vectors> |
| The evidence for this criteria may be found under the heading "vectors" and subheading "determine shape parameters using appropriate vector methods". This meets the criteria as an application has been written in Java script that determines shape parameters using appropriate vector methods. Whilst vectors are also briefly expanded upon. The code for the application may be accessed through clicking the link under the sub heading, which will redirect the user to the page. |

**P7 Determine the rate of change within an algebraic function.**

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| Link: <https://github.com/matthewsides/Mathematics/blob/master/README.md#8-rate-of-change> |
| This evidence is located under the heading "rate of change" and constitutes as meeting the criteria as the rate of change within an algebraic function is determined twice with the addition of conversion to hex and binary. Whilst the rate of change is also briefly glossed over before the examples, showing the formula used to determine the rate of change. |

**P8 Use integral calculus to solve practical problems involving area.**

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| Link: <https://github.com/matthewsides/Mathematics/blob/master/README.md#9-integral-calculus> |
| The evidence for this task located in the "math's" repository under the heading "integral calculus". The evidence provided meets the criteria as instances or examples of using integral calculus to solve practical problems involving area are illustrated. In addition the formula is also displayed along with a brief explanation of the subject and required knowledge (ideology) and methodology used during the process. |

**M1 Identify multiplicative inverses in modular arithmetic.**

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| Please use this section to provide all appropriate, valid and checked http Links that point to your evidence; use multiple lines to separate multiple links |
| Please provide a short (between 3 to 8 well considered, fully proofread and reflected sentences) explanation that justifies why the evidence/links you have provided is suitable as evidence of this requirement  TO DO (you can leave it blank now, we are going to address this un future sessions) |

**M2 Calculate probabilities within both binomially distributed and normally distributed random variables.**

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**M3 Evaluate the coordinate system used in programming a simple output device.**

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| Link: <https://github.com/matthewsides/Project01-TraceBall#13-cordinates-system> |
| This is evidenced in the GitHub repository "project01-traceball" under the heading "coordinates system" that goes through the coordinate system used in the programming of a simple output device. |

**M4 Analyse maxima and minima of increasing and decreasing functions using higher order derivatives.**

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| Please use this section to provide all appropriate, valid and checked http Links that point to your evidence; use multiple lines to separate multiple links |
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**D1 Produce a detailed written explanation of the importance of prime numbers within the field of computing.**

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**D2 Evaluate probability theory to an example involving hashing and load balancing.**

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**D3 Construct the scaling of simple shapes that are described by vector coordinates.**

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**D4 Justify, by further differentiation, that a value is a minimum.**

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