

(Holistic Rubric Example)

Mathematical Reasoning

5	Develops a methodical, powerful, and thorough plan for solving the problem. The approach and answers are explicitly detailed and reasonable throughout (whether or not the knowledge used is sophisticated or accurate). The student justifies all claims with compelling evidence and argument: counter-arguments, questionable data, and implicit premises are explored.
4	Develops fully a methodical plan for solving the problem. The approach taken is appropriate, well-thought out, and based on reasonable data and strategies. The student provides evidence and argument for most claims, and the quality of the argument is high. All important reasoning is explicit and logical, though the student may not have considered one or two implicit variables or premises. Even when there is limited mathematical knowledge and a failure to come up with the right answer by the preferred methods, all the answers and methods are reasonable.
3	Grasps the problem adequately and develops an acceptable plan for solving it. All important variables have been considered, though the arguments may be incomplete. The problem-solving plan may be inefficient. These papers provide some evidence that the student had difficulty devising an appropriate strategy. The final write-up of the data and analysis may have gaps or illogical organizations of steps. Some answers or strategies along the way may not be reasonable ones, but the work provides evidence that the student was able to recognize questionable answers and re-think the reasoning.
2	Provides a barely adequate plan for solving the problem, and/or fails to consider certain critical aspects of the problem in the overall strategy. Even when work is thorough, the answers and strategies along the way may not be reasonable or sound, suggesting that the student is "number crunching" with limited understanding of the meaning of the results and the logic of proving a point. There is a semblance of sequential steps and organization of data into a meaningful result, but no clear overall strategy or logic of working out an approach based on the needs of the problem.
1	The student has failed to come up with any clear, appropriate, and/or reasonable strategy for solving the problem. There is a semblance of proof or logic only: randomness or inappropriate step after step characterize the work provided. These papers never get much beyond random calculations, hunches, and/or drawings and notes.