## Classic Exemplars Rubric

<table>
<thead>
<tr>
<th>Level</th>
<th>Understanding</th>
<th>Strategies, Reasoning, Procedures</th>
<th>Communication</th>
</tr>
</thead>
</table>
| **Novice** | • There is no solution, or the solution has no relationship to the task.  
• Inappropriate concepts are applied and/or procedures are used.  
• The solution addresses none of the mathematical components presented in the task. | • No evidence of a strategy or procedure, or uses a strategy that does not help solve the problem.  
• No evidence of mathematical reasoning.  
• There were so many errors in mathematical procedures that the problem could not be solved. | • There is no explanation of the solution, the explanation cannot be understood or it is unrelated to the problem.  
• There is no use or inappropriate use of mathematical representations (e.g. figures diagrams, graphs, tables, etc.).  
• There is no use, or mostly inappropriate use, of mathematical terminology and notation. |
| **Apprentice** | • The solution is not complete indicating that parts of the problem are not understood.  
• The solution addresses some, but not all of the mathematical components presented in the task. | • Uses a strategy that is partially useful, leading some way toward a solution, but not to a full solution of the problem.  
• Some evidence of mathematical reasoning.  
• Could not completely carry out mathematical procedures.  
• Some parts may be correct, but a correct answer is not achieved. | • There is an incomplete explanation; it may not be clearly presented.  
• There is some use of appropriate mathematical representation.  
• There is some use of mathematical terminology and notation appropriate of the problem. |
| **Practitioner** | • The solution shows that the Student has a broad understanding of the problem and the major concepts necessary for its solution.  
• The solution addresses all of the mathematical components presented in the task. | • Uses a strategy that leads to a solution of the problem.  
• Uses effective mathematical reasoning.  
• Mathematical procedures used.  
• All parts are correct and a correct answer is achieved. | • There is a clear explanation.  
• There is appropriate use of accurate mathematical representation.  
• There is effective use of mathematical terminology and notation. |
| **Expert** | • The solution shows a deep understanding of the problem including the ability to identify the appropriate mathematical concepts and the information necessary for its solution.  
• The solution completely addresses all mathematical components presented in the task.  
• The solution puts to use the underlying mathematical concepts upon which the task is designed. | • Uses a very efficient and sophisticated strategy leading directly to a solution.  
• Employs refined and complex reasoning.  
• Applies procedures accurately to correctly solve the problem and verify the results.  
• Verifies solution and/or evaluates the reasonableness of the solution.  
• Makes mathematically relevant observations and/or connections. | • There is a clear, effective explanation detailing how the problem is solved. All of the steps are included so that the reader does not need to infer how and why decisions were made.  
• Mathematical representation is actively used as a means of communicating ideas related to the solution of the problem.  
• There is precise and appropriate use of mathematical terminology and notation. |