Vermont Math Problem Solving Criteria

Source: Vermont Department of Education
Subject: Mathematics
Grade(s): 8
# of scales: 4
Scale length: 4

Scale I: Understanding the Problem
4 Identified special factors that influenced the approach before starting the problem.
3 Understood the problem.
2 Understood enough to solve part of the problem or to get part of the solution.
1 Didn't understand enough to get started or make progress.

Scale II: How Student Solved Problem
4 Approach was efficient or sophisticated.
3 Approach would work for the problem.
2 Approach would only lead to solving part of the problem.
1 Approach didn't work.

Scale III: Decisions Along the Way
4 Clearly explained the reasons for the correct decisions made throughout the problem.
3 Didn't clearly explain the reasons for decisions, but work suggests correct reasoning used for only part of the problem.
2 Only partly correct reasoning, or correct reasoning used for only part of the problem.
1 No reasoning is evident from the work or reasoning is incorrect.

Scale IV: Outcomes of Activities
4 Solved the problem and made general rule about the solution or extended the solution to a more complicated situation.
3 Solved the problem and connected the solution to other math or described a use for what was learned in the "real world."
2 Only partly correct reasoning, or correct reasoning used for only part of the problem.
1 Solved the problem and stopped.
Kentucky Holistic Scoring Rubric for Grade 12 Math

Source: Kentucky Department of Education Open-Response Released Items and Scoring Rubrics: Grade 12, 1991-92

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<tr>
<th>Subjects: Mathematics</th>
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<tr>
<td>Grade(s) 12</td>
<td>1</td>
<td>5</td>
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**Holistic Scale**

5  The student completes all important components of the task and communicates ideas clearly.

The student demonstrates in-depth understanding of the relevant concepts and/or processes.

Where appropriate, the student chooses more efficient and/or sophisticated processes.

Where appropriate, the student offers insightful interpretations or extensions (generalizations, applications, analogies).

4  The student completes most important components of the task and communicates clearly.

The student demonstrates understanding of major concepts even though s/he overlooks or misunderstands some less important ideas or details.

3  The student completes some important components of the task and communicates those clearly.

The student demonstrates that there are gaps in his/her conceptual understanding.

2  Student shows minimal understanding.

Student unable to generate strategy or answer may display only recall effect.

Answer lacks clear communication.

Answer may be totally incorrect or irrelevant.

1  Blank/no response.