

Quantitative Reasoning Rubric (Draft)

	<b>Needs improvement (1)</b>	<b>Acceptable (2)</b>	<b>Excellent (3)</b>
<p><b>Interpretation</b>  <i>Ability to understand the information presented in mathematical forms as well as the underlying assumptions needed in order to create such forms</i>  <i>Demonstrated by correctly translating one form into another, or explaining the limitations of the given form</i>  <i>*forms: verbal, numerical, graphical, symbolic</i></p>	<p>Makes attempt to explain information presented in a mathematical form and/or translate into another mathematical form but done incorrectly, or no attempt made</p>	<p>Provides a mostly accurate explanation of information in the mathematical form and/or a mostly accurate translation into another mathematical form</p>	<p>Provides an accurate and complete explanation of information in the mathematical form and/or a complete and accurate translation into another mathematical form with appropriate details specified</p>
<p><b>Application-Assumptions</b>  <i>Ability to determine an appropriate strategy to approach a problem and/or ability to identify and describe the underlying assumptions in the model / data / approach</i>  <i>Demonstrated by properly setting up or choosing a correct approach to a contextual problem</i>  <i>(look at chosen strategy for approaching situation, not quality of argument)</i></p>	<p>The approach taken cannot solve the actual problem at hand, or no approach is shown ; and/or starts from false or misapplied assumptions about model / data / approach</p>	<p>The approach taken is a correct way of approaching the situation, though it may be incomplete; and/or explicitly and correctly describes underlying assumptions about model / data / approach</p>	<p>The approach taken is a correct way to approach the situation and all elements of the strategy are incorporated into work shown; and/or explicitly and correctly describes underlying assumptions about model / data and provides compelling rationale for appropriateness</p>
<p><b>Representation-Communication</b>  <i>Ability to express mathematical evidence in support of an answer</i>  <i>Demonstrated by stating logical and appropriately notated steps starting from the given problem and/or appropriately uses quantitative information as logical support of an argument</i>    <i>(look at logic of supporting argument regardless of strategy chosen)</i></p>	<p>No steps are given, or the steps given are unrelated to the problem and/or each other; and/or unsuccessfully attempts to use quantitative information (no clear connection between data and argument)</p>	<p>Steps are written with mostly good notation/vocabulary, and the majority of the steps are logically connected. Work may have minor errors or may have a break in logic, but the overall outline of work is appropriate to the problem; and/or uses appropriate quantitative information to support conclusion (may have minor errors)</p>	<p>Steps are logically connected, written with correct mathematical notation / vocabulary, and clearly walks the audience from the beginning of the problem to the final correct solution; and / or uses appropriate quantitative information in an effective format to properly support argument</p>
<p><b>Calculation-Numeracy</b>  <i>Ability to understand and work with measured quantities in context</i>  <i>Demonstrated by recognizing faulty answers and/or getting the correct output value after performing appropriate work with correct input value</i></p>	<p>Answer does not make sense in context and/or significant errors were made in calculating an output from a given input</p>	<p>Answer is in the right range of what is acceptable given the context though may be slightly off due to minor mistake in work, and/or the work performed with the input value is largely correct in getting an output value, though there may be minor errors</p>	<p>Answer is correct and makes sense in context and/or calculations attempted are successful and sufficiently comprehensive to support the correct output value</p>

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