

Quantitative Reasoning Rubric

Quantitative Reasoning Skills	Beginning	Developing	Competent	Accomplished
	Below basic understanding Beginning = greater than 30% errors in process	Basic understanding Developing = 20-30% errors in process	Good understanding Competent = 10-20% errors in process	Accurate and complete understanding Accomplished = less than 10% errors in process
Read and Identify mathematical information that is relevant in a problem.	The student cannot	The student can, with significant errors:	The student can, with minimal errors:	The student can, without significant error:
	Demonstrate understanding of what is being asked and required	Demonstrate understanding of what is being asked and required	Demonstrate understanding of what is being asked and required	Demonstrate understanding of what is being asked and required
	Extract relevant information needed to solve a problem	Extract relevant information needed to solve a problem	Extract relevant information needed to solve a problem	Extract relevant information needed to solve a problem; explain if /why other information is irrelevant
	Recognize and interpret mathematical symbols	Recognize and interpret mathematical symbols	Recognize and interpret mathematical symbols	Recognize and interpret mathematical symbols
Interpret and analyze mathematical information presented.	The student cannot:	The student can, with significant errors:	The student can, with minimal errors:	The student can, without significant error:
	Identify key topics and types of problems	Identify key topics and types of problems	Identify key topics and types of problems	Identify and describe key topics and types of problems
	Interpret relevant information from symbols, definitions, theorems and laws	Interpret relevant information from symbols, definitions, theorems and laws	Interpret relevant information from symbols, definitions, theorems and laws	Interpret relevant information from symbols, definitions, theorems and laws
	Demonstrate understanding of mathematical vocabulary	Demonstrate understanding of mathematical vocabulary	Demonstrate understanding of mathematical vocabulary	Demonstrate understanding of mathematical vocabulary
	Follow directions to construct graphs, charts and tables to represent relevant mathematical information	Construct graphs, charts and tables to represent relevant mathematical information	Independently construct graphs, charts and tables to represent relevant mathematical information	Independently construct and interpret graphs, charts and tables to represent relevant mathematical information and derive the optimal solution

Problem Solving Select appropriate methods and apply them to solve problems.	The student cannot	The student can, with significant errors:	The student can, with minimal errors:	The student can, without significant error:
	Go beyond the first step of a multistep problem	Follow an extended line of formal reasoning	Follow an extended line of formal reasoning	Follow and articulate an extended line of formal reasoning
	Apply definitions, theorems, laws and formulas appropriately	Apply definitions, theorems, laws and formulas appropriately	Apply definitions, theorems, laws and formulas appropriately	Apply definitions, theorems, laws and formulas appropriately
	Employ technology to complement “by hand” calculations	Employ technology to complement “by hand” calculations	Employ technology to complement “by hand” calculations	Employ and explain the use of technology to complement “by hand” calculations
	Present an answer in an understandable form	Present a final answer in a correct	Present a final answer in a correct	Present and explain a final answer in correct form
Check and validate Estimate and evaluate the validity and reasonableness of results.	The student cannot:	The student can, with significant errors:	The student can, with minimal or no errors:	The student can accurately and completely:
	Check and verify that the final answer makes mathematical sense	Check and verify that the final answer makes mathematical sense	Check and verify that the final answer makes mathematical sense	Check and verify that the final answer makes mathematical sense
	Check and verify that the final answer makes common sense	Check and verify that the final answer makes common sense	Check and verify that the final answer makes common sense	Check and verify that the final answer makes common sense
	Employ technology to validate answers, as appropriate	Employ technology to validate answers, as appropriate	Employ technology to validate answers, as appropriate	Employ technology to validate answers, as appropriate
Communicate: Effectively communicate quantitative concepts using standard written English and correct mathematical syntax	The student cannot:	The student can, with significant errors:	The student can, with minimal or no errors:	The student can:
	Present and articulate basic concepts and results in a logical and comprehensible manner	Present and articulate basic concepts and results in a logical and comprehensible manner	Present and articulate a variety of complex concepts and results in a logical and comprehensible manner	Present and articulate a variety of complex concepts and results thoroughly and accurately in a logical and comprehensible manner
	Apply mathematical principles to “real-life” situations	Apply mathematical principles to “real-life” situations	Apply mathematical principles to “real-life” situations	Apply mathematical principles with facility in “real life” situations