Pueblo Community College

QUANTITATIVE REASONING RUBRIC

Competency in quantitative reasoning is a student's ability to interpret, explain, represent, and apply quantifiable information to identify connections, formulate reasonable solutions, and defend conclusions.

Scores should be assigned for all applicable skills dimensions outlined below. If the parameters of the assignment used to measure this student learning outcome do not offer the opportunity to demonstrate a given performance criterion, a score of N/A should be recorded.

ISLO 3	4 Exemplary	3 Accomplished	2 Developing	1 Beginning
3a: Interpret Numerical Information	Provides accurate explanations of information presented in mathematical forms. Makes appropriate inferences based on that information.	Provides accurate explanations of information presented in mathematical forms.	Provides explanations of information presented in mathematical forms, but makes errors within the explanation or inappropriate inferences based on the information.	Attempts to explain information presented in mathematical forms, but draws incorrect conclusions about what the information means.
3b: Represent Numerical Information	Skillfully converts relevant information into an insightful mathematical portrayal in a way that contributes to a further or deeper understanding.	Competently converts relevant information into an appropriate and desired mathematical portrayal.	Completes conversion of information but resulting mathematical portrayal is only partially appropriate or accurate.	Completes conversion of information but resulting mathematical portrayal is inappropriate or inaccurate.
3c: Perform Computations	Calculations attempted are all successful and sufficiently comprehensive to solve the problem. Calculations are also presented elegantly (clearly, concisely, etc.) and address the validity of the results.	Calculations attempted are essentially all successful and sufficiently comprehensive to solve the problem. Calculations are also presented cohesively and address the validity of the results.	Calculations attempted are successful but only represent a portion of the calculations required to comprehensively solve the problem.	Calculations are attempted but are unsuccessful and may not be comprehensive.
3d: Address Assumptions	Specifically describes assumptions and provides compelling rationale for why each assumption is appropriate. Shows awareness that confidence in final conclusions is limited by the accuracy of the assumptions.	Specifically describes assumptions and provides rationale for why most assumptions are appropriate.	Specifically describes assumptions but attempts made to address rationale are inappropriate or ineffective.	Does not describe assumptions or lacks rationale.
3e: Formulate Reasonable Solutions	Uses quantitative analysis as the basis for deep and thoughtful judgments, drawing insightful, carefully qualified conclusions from this work.	Uses quantitative analysis as the basis for deep and thoughtful judgments, drawing insightful, carefully qualified conclusions from this work.	Uses quantitative analysis as the basis for tentative, basic judgments, drawing plausible conclusions from this work.	Uses quantitative analysis as the basis for unskilled judgments, is hesitant or uncertain about drawing conclusions from this work.
3f: Defend Arguments	Uses quantifiable information in connection with an argument or description of purpose of the work, defends it effectively, and explains with consistently high quality.	Uses quantifiable information in connection with an argument or description of purpose of the work, though data defending it may be less than complete or some parts of the explanation may be disjointed.	Presents an argument but does not provide adequate quantifiable information to support it or connect to the argument and purpose of work.	Uses quantifiable information, but does not articulate an argument that connects to the purpose of the work and the information.

Rubric adapted from the Colorado Department of Higher Education (CDHE) Quantitative Literacy rubric specifically for community college use.