

# Mathematical Proof Rubric

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**Description:** This rubric is for grading general mathematical proofs.

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	Unsatisfactory	Basic	Proficient	Distinguished
<b>Hypothesis</b> The hypothesis statement	The student incorrectly states or does not state the hypothesis.	The student states the hypothesis, but may have some errors or incorrect logic, e.g. using 'if, then' instead of if and only if.'	The student correctly states the hypothesis in the opening of the proof with correct logic statements, e.g. 'if and only if'.	The student correctly states the hypothesis in the opening of the proof with correct logic statement, and adds explanatory text to the hypothesis.
<b>Theorems</b> The use of theorems, lemmas, and definitions.	The student incorrectly applies more than one of the theorems, lemmas, and definitions.	The student incorrectly applies one of the definitions, lemmas, and theorems.	The student correctly uses definitions, lemmas, and theorems.	The student correctly uses definitions, lemmas, and theorems. Further, the student correctly names theorems, and/or provides explanatory text.
<b>Correctness</b> The correctness (logic) of the proof.	The student does not follow a logical progression at all. The conclusion does not follow from the argument.	The student follows a logical progression overall, but omits steps or uses 'it is clear that,' or similar at inappropriate times.	The student's proof follows a correct logical progression. One part follows directly from the next.	The student's proof follows a correct logical progression. One part follows directly from the next. Further, the student clearly explains any steps, and forgoes the use of 'it is evident' and the like, unless it is warranted, e.g. 'It is clear that $2+2=4$ ' is acceptable
<b>Mathematics</b> The use of mathematical functions, equations, algebra, etc. (graph work should go here if required)	The student has major errors in arithmetic, or algebra.	The student has minor errors in sign, arithmetic, or algebra in equations, functions, etc.	The student properly uses all mathematical equations, functions. No errors in sign or algebra.	The student properly uses all mathematical equations, functions. No errors in sign or algebra. Further, the student progresses easily from one equation to the next without the need for the

reader to interpret the steps.

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**Writing**

The mechanics and style of writing in the proof.

The student has major errors in grammar, spelling, and/or syntax. The proof is difficult to read for the errors.

The student has minor errors in grammar, spelling and/or syntax. The proof is still readable.

The student correctly uses spelling, grammar and syntax.

The student correctly uses spelling, grammar and syntax. Further, the student's writing and word choice show maturity and professionalism.

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