

# Problem One

<i>Criteria</i>	<b>Strong</b>	<b>Medium</b>	<b>Poor</b>	<i>Points</i>
<b>Summary Sheet: Interpretation of Contest Problem</b>	Clear background, restates the problem and specifies focus areas of the paper, as well as stating all crucial assumptions  <i>(5 points)</i>	Mentions the problem, but does not specify the goals of the paper; not all key assumptions stated  <i>(3 points)</i>	Problem not restated, no assumptions mentioned  <i>(1 point)</i>	5/5
<b>Summary Sheet: Overview of Methods</b>	Indicates the methodology used, as well as their purposes in a chronological fashion; easy to understand and not too technical  <i>(10 points)</i>	Methods stated, unclear and difficult to understand  <i>(6 points)</i>	Methods barely or not mentioned, no explanations given  <i>(2 points)</i>	6/10
<b>Summary Sheet: Statement of Conclusions</b>	Important results are included without becoming too specific, possible strengths and weaknesses mentioned  <i>(10 points)</i>	Results included, but not clear and/or possibly too technical  <i>(6 points)</i>	Few or no results, strengths and weaknesses not mentioned  <i>(2 points)</i>	3/10
<b>Introduction</b>	Includes background, clearly restates the problem, defines vague terms, briefly overviews approaches, important results with at most only one requiring modifications  <i>(5 points)</i>	2-3 of the requirements are missing  <i>(3 points)</i>	Requirements are missing  <i>(1 point)</i>	5/5

<b>Solution: Assumptions/ Justifications</b>	Reasonable, does not overly limit the scope of the problem, majority of the justifications are appropriate and proven  <i>(5 points)</i>	More than 25% of the solutions section do not meet the criteria, important assumptions are not mentioned  <i>(3 points)</i>	More than 50% do not meet the criteria, major assumptions are left out  <i>(1 point)</i>	5/5
<b>Solution: Usage of Method(s)</b>	Method(s) are used correctly, efficiently, and effectively for solving the problem  <i>(10 points)</i>	Method(s) are used correctly but do not return a reasonable result or are inefficient for solving the problem  <i>(6 points)</i>	Method(s) are incorrectly utilized  <i>(2 points)</i>	8/10
<b>Solution: Explanation</b>	All variables are clearly labeled, solution has detailed, accurate, and concise mathematical explanations for each step.  <i>(20 points)</i>	Most variables are clearly labeled, presentation of solution is somewhat detailed, accurate, and concise, graphs and illustrations are explained  <i>(15 points)</i>	Poor labeling of variables, presentation is vague/unclear and long winded  <i>(5 points)</i>	14/20
<b>Solution: Supporting Figures and Graphics</b>	Graphs are pleasing and straightforward, enough graphs, not too many, related to the solution itself  <i>(5 points)</i>	Some graphs are hard to understand and/or simply unnecessary  <i>(3 points)</i>	Little to no graphs present and/or are poorly constructed  <i>(1 point)</i>	5/5
<b>Solution: Sensitivity/ Stability</b>	Graphs presented with a clear restatement and explanation of selected numerical data, thoughtfully accounts for and explains any possible errors  <i>(5 points)</i>	Graphs presented with restatement of data only, with little to no recognition of errors  <i>(3 points)</i>	insufficient and unclear graphs produced, none or almost no data presented, error interpretation is non-existent <i>(1 point)</i>	2/5

<b>Solution: Strengths &amp; Weaknesses</b>	At least three strengths and weaknesses in total are proposed for each model, more than 90% of comments are insightful and reflective <b>(5 points)</b>	Amount met and 50%-90% of comments are strong <b>(3 points)</b>	Not enough strengths and/or weaknesses OR less than 50% of remarks are above par <b>(1 point)</b>	4/5
<b>Conclusion</b>	The purpose, method, and result are clearly listed for each model <b>(10 points)</b>	Summary of results is unclear, but the general idea of the group's findings is present <b>(6 points)</b>	Few or none of the requirements are present <b>(1 point)</b>	4/10
<b>Format</b>	0-1 criteria missing from the following: - Length does not exceed 35 pages - References are clearly represented and sources are correctly cited (Cannot just make one up) - Formulas and graphs are plainly labeled - Page number, control number are labeled according to the rules - Table of Contents - Correct font for code and body - file type (PDF) <b>(10 points)</b>	2-3 formatting criteria missing          <b>(6 points)</b>	More than 3 formatting criteria missing          <b>(1 point)</b>	9/10
				Total: 70 /100

# Problem Two

<b>Criteria</b>	<b>Strong</b>	<b>Medium</b>	<b>Poor</b>	<b>Points</b>
<b>Summary Sheet: Interpretation of Contest Problem</b>	Clear background, restates the problem and specifies focus areas of the paper, as well as stating all crucial assumptions  <i>(5 points)</i>	Mentions the problem, but does not specify the goals of the paper; not all key assumptions stated  <i>(3 points)</i>	Problem not restated, no assumptions mentioned  <i>(1 point)</i>	2/5
<b>Summary Sheet: Overview of Methods</b>	Indicates the methodology used, as well as their purposes in a chronological fashion; easy to understand and not too technical  <i>(10 points)</i>	Methods stated, unclear and difficult to understand  <i>(6 points)</i>	Methods barely or not mentioned, no explanations given  <i>(2 points)</i>	9/10
<b>Summary Sheet: Statement of Conclusions</b>	Important results are included without becoming too specific, possible strengths and weaknesses mentioned  <i>(10 points)</i>	Results included, but not clear and/or possibly too technical  <i>(6 points)</i>	Few or no results, strengths and weaknesses not mentioned  <i>(2 points)</i>	7/10
<b>Introduction</b>	Includes background, clearly restates the problem, defines vague terms, briefly overviews approaches, important results with at most only one requiring modifications  <i>(5 points)</i>	2-3 of the requirements are missing  <i>(3 points)</i>	Requirements are missing  <i>(1 point)</i>	4/5
<b>Solution: Assumptions/</b>	Reasonable, does not overly limit the scope of the problem, majority of the	More than 25% of the solutions section do not	More than 50% do not meet the criteria,	4/5

<b>Justifications</b>	justifications are appropriate and proven  <i>(5 points)</i>	meet the criteria, important assumptions are not mentioned  <i>(3 points)</i>	major assumptions are left out  <i>(1 point)</i>	
<b>Solution: Usage of Method(s)</b>	Method(s) are used correctly, efficiently, and effectively for solving the problem  <i>(10 points)</i>	Method(s) are used correctly but do not return a reasonable result or are inefficient for solving the problem  <i>(6 points)</i>	Method(s) are incorrectly utilized  <i>(2 points)</i>	5/10
<b>Solution: Explanation</b>	All variables are clearly labeled, solution has detailed, accurate, and concise mathematical explanations for each step.  <i>(20 points)</i>	Most variables are clearly labeled, presentation of solution is somewhat detailed, accurate, and concise, graphs and illustrations are explained  <i>(15 points)</i>	Poor labeling of variables, presentation is vague/unclear and long winded  <i>(5 points)</i>	9/20
<b>Solution: Supporting Figures and Graphics</b>	Graphs are pleasing and straightforward, enough graphs, not too many, related to the solution itself  <i>(5 points)</i>	Some graphs are hard to understand and/or simply unnecessary  <i>(3 points)</i>	Little to no graphs present and/or are poorly constructed  <i>(1 point)</i>	4/5
<b>Solution: Sensitivity/ Stability</b>	Graphs presented with a clear restatement and explanation of selected numerical data, thoughtfully accounts for and explains any possible errors  <i>(5 points)</i>	Graphs presented with restatement of data only, with little to no recognition of errors  <i>(3 points)</i>	insufficient and unclear graphs produced, none or almost no data presented, error interpretation is non-existent <i>(1 point)</i>	3/5
<b>Solution: Strengths &amp;</b>	At least three strengths and weaknesses in total are proposed for each model, more	Amount met and 50%-90% of comments are strong	Not enough strengths and/or weaknesses OR	3/5

<b>Weaknesses</b>	than 90% of comments are insightful and reflective <b>(5 points)</b>	<b>(3 points)</b>	less than 50% of remarks are above par <b>(1 point)</b>	
<b>Conclusion</b>	The purpose, method, and result are clearly listed for each model <b>(10 points)</b>	Summary of results is unclear, but the general idea of the group's findings is present <b>(6 points)</b>	Few or none of the requirements are present <b>(1 point)</b>	3/10
<b>Format</b>	0-1 criteria missing from the following: - Length does not exceed 35 pages - References are clearly represented and sources are correctly cited (Cannot just make one up) - Formulas and graphs are plainly labeled - Page number, control number are labeled according to the rules - Table of Contents - Correct font for code and body - file type (PDF) <b>(10 points)</b>	2-3 formatting criteria missing          <b>(6 points)</b>	More than 3 formatting criteria missing          <b>(1 point)</b>	9/10
				Total: 62 /100