Project 3 Rubric Student Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_

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| **Item**  **Number** | **Criteria** | **Ratings** | **Score** |
| 1 | OOP design used and Catapult object created correctly | |  |  |  | | --- | --- | --- | | 10 pts  Full Marks  OOP design used and the Catapult object creates a searchable matrix of trajectories for the given speeds and angles | 5 pts  Partial Credit  OOP design not used or the Catapult object does not correctly create a searchable matrix of trajectories for the given speeds and angles | 0 pts  No Marks  OOP design not used nor does the Catapult object correctly create a searchable matrix of trajectories for the given speeds and angles | |  |
| 2 | Calculations are correct and the appropriate Math class methods are used | |  |  |  | | --- | --- | --- | | 10 pts  Full Marks  Calculations are correctly created and use the sin() and toRadians() methods where appropriate | 5 pts  Partial Credit  Calculations are incorrect or the sin() and toRadians() methods where not used | 0 pts  No Marks  Calculations are incorrect and the sin() and toRadians() methods where not used | |  |
| 3 | Input read from a text file and calculations stored correctly | |  |  |  | | --- | --- | --- | | 10 pts  Full Marks  Input read from a text file and the calculations are stored appropriately | 5 pts  Partial Credit  Input is not read from a text file or is hard coded or the calculations are not stored appropriately | 0 pts  No Marks  Input is not read from a text file or is hard coded and the calculations are not stored appropriately | |  |
| 4 | Single dimensional arrays used appropriately | |  |  |  | | --- | --- | --- | | 10 pts  Full Marks  Single dimensional arrays used to store the speed and angle values. Loops are used to iterate through the arrays | 5 pts  Partial Credit  Single dimensional arrays used to store either the speed and angle values. Loops are used to iterate through the arrays | 0 pts  No Marks  Speed and angle values are not stored in arrays. Loops are not used to iterate through the arrays | |  |
| 5 | 2D array(s) used appropriately | |  |  |  | | --- | --- | --- | | 10 pts  Full Marks  2D array(s) are used to store the calculated values. Loops are used to iterate through the array(s) | 5 pts  Partial Credit  2D array(s) are used to store the calculated values. Loops are consistently used to iterate through the array(s) | 0 pts  No Marks  The calculated results are not stored in a 2D array. Loops are not used to iterate through the array(s) | |  |
| 6 | Output is correct | |  |  |  | | --- | --- | --- | | 10 pts  Full Marks  Output is correct and contains all of the possible distances in a table. Under the tables there should be a list of the speed and angle pairs that fit the requirements | 5 pts  Partial Credit  Output is mostly correct but there are elements are missing from the required output | 0 pts  No Marks  The output is mostly incorrect. A majority of the elements are missing | |  |
| 7 | Code compiles and runs without errors | |  |  | | --- | --- | | 15 pts  Full Marks  Code compiles and runs without errors | 0 pts  No Marks  Code does not compile | |  |
| 8 | Code is properly commented | |  |  |  | | --- | --- | --- | | 10 pts  Full Marks  Code is properly commented including all required header information | 5 pts  Partial Credit  Code has some of the required comments but is sparsely commented or missing the correct header information | 0 pts  No Marks  Code is sparsely commented or not commented at all and is missing all or most of the correct header information | |  |
| 9 | Program is properly designed and uses whitespace effectively | |  |  |  | | --- | --- | --- | | 15 pts  Full Marks  Program is properly designed and uses whitespace effectively | 5 pts  Partial Credit  Program is not properly designed or it does not use whitespace effectively | 0 pts  No Marks  Program is not properly designed and it does not use whitespace effectively | |  |

Comments: