Assessment Instructions (Catapult-A-Cantaloupe)

Instructions: Write a program to calculate the trajectory of a projectile based on launch angles and launch velocities.

1 Create a new project called Catapult Contest in the Unit09 Assessments folder.
2 Create a CatapultTester and a Catapult class in the newly created project folder.
3 Review the information about calculating projectile trajectories in the Virtual Lecture Notes.
4 Work out several answers with pencil, paper, and calculator first, before attempting to write the program.
5 You **will** need to study the **`toRadians()`** and the **`sin()`** methods in the Java API for the Math class.
6 Calculate the distance an object can be catapulted for at least six launch angles and seven launch speeds (see expected output). Store your data in a two dimensional array.

Expected Output: When your program runs correctly, the format of the output table should resemble the following, but with the appropriate data for each row and column. You may use appropriate angles and

```
                              Projectile Distance (feet)
   MPH      25 deg      30 deg      35 deg      40 deg      45 deg      50 deg
================================================================================
    20
    25
    30
    35
    40
    45
    50
```

velocities of your choice.

Grading Rubric	**Pts**	**Earned**
Comments include name, date, and purpose of the program.	1	
Catapult class correctly written.	4	
CatapultTester class correctly written.	4	
Method documentation included.	1	
Method headers correctly written.	2	
Methods correctly implemented.	4	
Loops correctly used.	2	
Output neatly displayed in columns and rows.	3	
Output printed with **`printf()`** method.	2	
No compiler or runtime errors.	1	
Thoughtful PMR included.	1	
Total	25	

Grading: Your assessment will be graded according to the following rubric.

Submission: Submit both files for a grade.