**Test #2**

MAE 478, Spring 2017

**Date:** Thursday, March 16, 2017 during class (12:30pm-1:45pm).

**Test Rules:**

1. You will be allowed to use your calculator during this test.
2. You will be allowed to create and use two one-page crib sheets during the test in order to write down important formulas or notes.
3. Talking/texting is prohibited.
4. The test will conclude exactly at 1:45pm. I will start picking up tests at that time.

**Test Hints:**

1. You should understand, be able to sketch, and define the geometry of the propellant grain configurations I went over in class.
2. You should understand and be able to apply the equations and methods used in internal ballistics analysis of propellant grain configurations.
3. You should understand the terminology associated with propellant grain design and combustion.
4. You should be able to classify each of the missiles discussed in the missile of the day handouts. (E.g. are they air-to-air, anti-tank, ground-to-air, etc.). All missiles of the day from the entire semester until now are valid problems**.**
5. You should be able to identify and sketch the various types of thrust vector control.
6. You should understand how missiles are controlled using aerodynamic control surfaces and 2D supersonic airfoil theory. There may be work out problems related to this. I will not cover finite span theory on this test.