MAT 2240 - Linear Algebra
Project #3

Directions: Complete the following exercises *after* the accompanying lecture has been given by the instructor. A combination of computer work and hand-written work may be required. All solutions should be printed and/or written neatly and submitted.

1. Given a building on Appalachian State University's campus, your group of two to three individuals **must use** the *Surveyor's Method* described in *The Surveyor's Area Formula* article by B. Braden (http://www.jstor.org/stable/2686282) and MatLab to determine the area (in both feet and acres) that the building sits on. Resources you may find helpful are listed below.

   - Google Maps - Contains features relevant to measuring distances, capable of "satellite view"
   - Google Earth (Pro) - Contains additional features not found in Google Maps
   - Various MatLab functions such as **xlsread()**, **"for loops"**, and **plot()**.

   You will be responsible for formatting your submitted work according to the accompanying template. Please include the coordinates that your group uses in an Excel file (see the in-class example file).

2. Write a one-page reflection on article mentioned above. The format should be 12-point Times New Roman font with standard margins. (Single-spaced)

Names of Group Members: Dustin Roten, Eric Marland

Problem Statement: Determine the area (in acres and feet) taken up by the building assigned to your group.

Assigned Building at ASU: Walker Hall

Included Vertices, Code, and Building Image(s):

	A	B
1	X	Y
2	-1	-1
3	-0.9	-0.729
4	-0.8	-0.512
5	-0.7	-0.343
6	-0.6	-0.216
7	-0.5	-0.125
8	-0.4	-0.064
9	-0.3	-0.027
10	-0.2	-0.008
11	-0.1	-0.001
12	0	0
13	0.1	0.001
14	0.2	0.008
15	0.3	0.027
16	0.4	0.064
17	0.5	0.125
18	0.6	0.216
19	0.7	0.343
20	0.8	0.512
21	0.9	0.729
22	1	1

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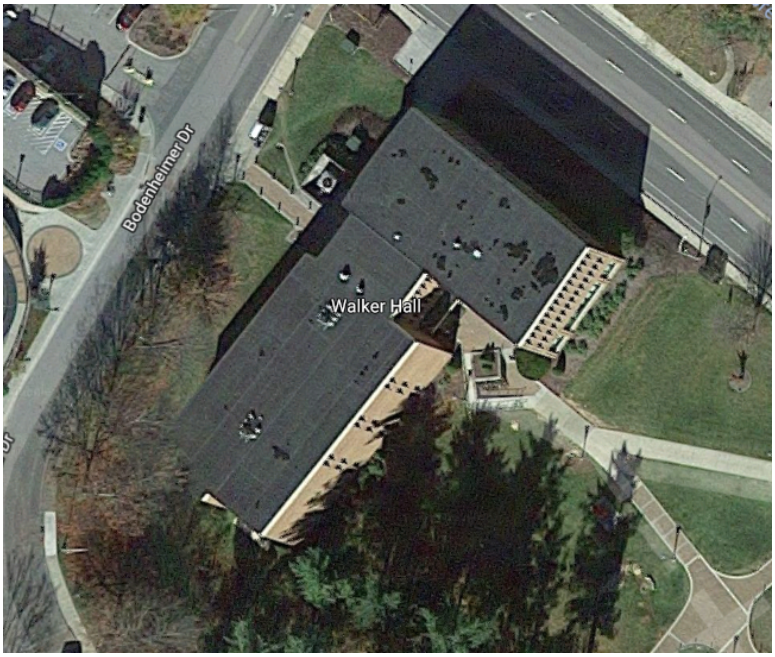
```
Data = xlsread('Testing.xlsx');

plot(Data(:,1), Data(:,2))
hold on;

Derivative = double.empty(0);
for i = 1:(length(Data)-1)
    Derivative(i,1) = (Data(i+1,1)+Data(i,1))/2;
    Derivative(i,2) = (Data(i+1,2) - Data(i,2))/(Data(i+1,1) - Data(i,1));
end

plot(Derivative(:,1), Derivative(:,2))


a = 0;
while a < 0.9
    a = rand();
    disp(a);
end
```



Calculated Area: