Applied Math Name _____
Lawn Care Lab Date _____

Objective:

The Tahanto Beautification Committee has tasked you with making the grounds more aesthetically please. Now you will reseed the grassing regions immediately surrounding the Tahanto building. How many pounds of seed will you need to reseed the grass within the access road around the school building?

Estimated class time hours: 6

Helpful Information:

- One pound of grass seed covers 350 square feet, unless you do advanced
- **You will not have a tape measure**, so you will have to estimate distances with the length of your step. You will verify using Google Maps.
- There are 43,560 square feet per acre
- The distance between bases on a softball field: 60 feet
- Percent error is $\frac{\text{actual} - \text{estimated}}{\text{actual}} = \frac{\text{Google} - \text{mine}}{\text{Google}}$. This will look like "=(D5-D3)/D5" (your letters may be different). Format as %. What do the negative and positive results indicate? _____ _____

Directions for estimating:

1) First count how many steps you walk from one base to another on the softball field. Verify by doing one more count to another base. Make sure you walk in a **normal stride**, because your final answer will depend on you walking the approximately same distance for each step!

   You don't want to walk along side of another person as that may throw off your stride.

   Number of steps = _____/60 ft = _____ ft/step

2) As you go to an area, it is very important that you first determine which area formula you will use: a rectangle, triangle, or trapezoid. Then just walk each of those important sides to find how many steps it is. You don't need to "measure" any other dimensions.

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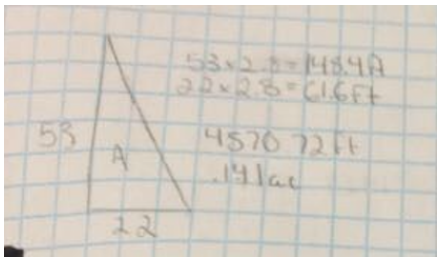
3) You will turn in a sketch of **each area** on a separate sheet of paper. **Important: Each significant side of your diagram** should be labeled with the number of steps **AND** also the number of feet. The diagrams do not have to be perfectly to scale, but they should be clean diagrams.



4) Calculate the area of each section of lawn showing the formulas used and your work.

What to Submit:

1. **Spreadsheet** that looks as follows:

Get from your work | Get from Maps | Formula | Formula

Region Name	Approximate Shape	Approximate area (sq ft)	Google Approximate Area (acres)	Google Approximate Area (sq ft)	Percent Error
A	Rectangle				
…					
Totals:					
Total lbs of grass seed needed:					

Be sure to answer the question on the spreadsheet. I suggest highlighting/bolding the answer so it is easy to find. Also, for any percent error greater than or equal to 25%, add a note to the cell (right click, add note) explaining why you think the error is so large.

2. **Scan** of handwritten work. This includes your map legend, sketches and math work.
3. **Google Map**: Within each named region, you must include:
   a. My estimate = ???
   b. Google estimate = ???

4. **Google Doc** for reflection:
   - Before even starting any work, look at the map or walk around the building. Then estimate how many bags of grass seed do you think you will need. Compare your final answer with this.
   - Overall, how did your rough calculates by foot compare to the actual area of each region?
   - What tool, formula, or tricks did you find to be helpful or insightful? Be specific and detailed
   - Based on your work, how much do you think it would cost to reseed ALL the grass on Tahanto's campus? Back up your answer with reason.
   - Other observations

Rubric

A: Exceptional	Proficient Plus: Excellent use of shading. Google Map might contain extra information and/or extra regions. Research seed cost per bag from a hardware store and use those numbers in your table. Reflections are insightful and dig deeper than Proficient.
B: Proficient	Data is accurate. Organization is clean. Spreadsheet auto calculates. Handwritten work on clear. Google Maps contains all necessary data. Reflections accurately answer the prompts.
C: Basic	Some missing data. Not full auto calculation. Reflections are brief.
D: Developing	Significant portions are missing from spreadsheet.
F: Inadequate	Incomplete by missing most information.

Legend and Work

Work for each region

A	**B**	**C**
D	**E**	**F**
G	**H**	**I**

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J	K	L