

Applied Mathematics Midterm

Welcome to the Applied Math midterm! Below you will find four options from which to choose one. You may use your previous projects as reference. You may **not** use someone else's work or share documents. Use the Internet for research only, not for communicating with others.

Option 1: How much will it cost to re-floor your room?

Similar to the Flooring Project, you will measure the dimensions of your room (or any room in your house). You will submit one spreadsheet, one doc and one scale drawing.

- Write an introduction about which room and what you would like to do with it. Include how much you expect to pay.
- You must choose four (six for Advanced) flooring options that you like or different types. You may use any store as a source for supplies (Home Depot, Lowe's, etc).
- You must have two tables (one for the dimensions of your room and one for the cost calculation)
- You must auto-calculate area, # of units needed (use ROUNDUP) and total cost.
- Add pictures of samples into the spreadsheet.
- Add links to evidence that includes cost and coverage
- Reflections must include how your expectations compared to the projects costs and other observations.

Rubric

A: Exceptional	Proficient Plus: Excellent use of shading. Pictures of carpet/wood inserted into the spreadsheet. More flooring options. Accurately subdivided room (include the door alcove and desk alcove). Drawing is precise and includes the alcoves and closets. Compare costs from different stores.
B: Proficient	Data is accurate. Organization is clean. Spreadsheet auto calculates. Links work well. Two carpets, two hardwood flooring. Good estimation of room dimensions. Drawing is a good approximation.
C: Basic	Some missing data. Not full auto calculation.
D: Developing	Significant portions are missing from spreadsheet.
F: Inadequate	Incomplete by missing most information.

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Option 2: How much will it cost to reseed all grass regions at Tahanto? (Or you may choose your house, etc)

Similar to the Lawn Care Lab, you will find the estimated cost to reseed all grass regions at Tahanto. You do to have to take walk estimates and show hand-written work. You will submit one map, one spreadsheet, and one doc. Here are the parameters:

- Log in to Google Maps > Menu > Your places > Maps > Create Map. Using satellite under Base Map, trace the region around the north field, not including dirt and paved regions. Make sure to name the map and the region.
- Set up a spreadsheet with columns of data that identify/calculate acreage to square feet, three types of grass seed, unit price, how much each bag covers, how many bags will be needed, cost for each seeding option
- You may use Lowe's, Home Depot or other reliable source for grass seed.
- You must have embedded links for evidence
- Attach map,
- You must have an observation in a Google Doc that describes your process or anything of interest. Be insightful and clear. Use prompts from previous project, if needed.
- *Advanced*: research and calculate cost for artificial turf.

Rubric

A: Exceptional	Proficient Plus: Google Map might contain extra information and/or extra regions. Research seed from multiple stores and compare costs. Reflections are insightful and dig deeper than Proficient. Look into other options like artificial turf.
B: Proficient	All documents and sheets are named well. Excellent use of shading. Data is accurate. Organization is clean. Spreadsheet auto calculates. Google Maps contains all necessary data. Reflections are precise and thought-out.
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.

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Option 3: How much will it cost for a weekend away?

Similar to the Dream Vacation Project, you want to get away for the weekend. You will submit one map, one spreadsheet, and one doc. Here are the criteria for your trip.

- You leave on a Friday afternoon and return on a Sunday night
- You must have a goal for the weekend (hiking trip, boating trip, sightseeing, etc). Be specific about when this trip will take place by giving actual dates.
- You must pay for lodging. Lodging can be hotel, motel, AirBnB, camping, etc.
- You must have a table with hourly itinerary and ongoing costs. Provide evidence.
- You must have a table with category costs (i.e., food, lodging, transportation, etc)
- The totals must be equal
- How do you plan to get there? Calculate all transportation costs: rental, gas, miles driven, bus fare, train fare, flight, Uber, etc.
- *Advanced*: include some alternative lodging, transportation, or activities and compare total to original.

Rubric

A: Exceptional	Map includes description at each pin and a directions layer. Add another tab that includes more expensive options.
B: Proficient	Data is accurate. Excellent use of shading. Itinerary is detailed and precise. Evidence is provided for all monies spent. Spreadsheet auto calculates. Some pictures are embedded. Analysis tab has graph and table of categories. Map has all pins.
C: Basic	Missing data. Itinerary is incomplete. Maybe some missing evidence.
D: Developing	Significant portions are missing from spreadsheet and slideshow.
F: Inadequate	Incomplete by missing most information.

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Option 4: Answer a specific question that you think is important

This option is an opportunity for you to pose a question and answer it. The answer to the question should be related to any of the material we covered this semester: perimeter, area, costs, trends, gift giving, vacationing, car costs, etc. You must submit a spreadsheet with data, calculations, evidence and observations.

Rubric

A: Exceptional	Proficient Plus: Excellent use of shading, bold and larger text. Pictures, samples and colors spice up the spreadsheet. Observations are insightful and clear.
B: Proficient	Answers the question. Data is accurate. Organization is clean. Spreadsheet auto calculates. Links work well. Correct grammar and spelling. Delete unused rows/columns.
C: Basic	Reasonably answers the question. Some missing data. Not full auto calculation. Many grammatical errors.
D: Developing	Question not answered. Significant portions are missing from spreadsheet. Significant grammatical errors.
F: Inadequate	Incomplete by missing most information.