Math Extra Credit Project:

𝒴our Dream Home

Congratulations! You just won **$1,000,000** in a housing sweepstakes, and now it's time to design that dream home you've always wanted! Although you do have quite a bit of money to spend, you will have to work within the following limitations:

1. The cost of land in your area is **$5000 per acre**. (Although not quite accurate, for the purposes of this project treat *one square acre as an area 200 feet on each side.*)

2. The building cost for a custom home like yours is **$100 per square foot**. This means that a 2500 square foot home would cost 2500 x $100 = $250,000. (The place you live in real life is probably somewhere between 800 and 3000 square feet). To simplify the project, all furnishings, etc. are included in this cost.

3. The cost for barns, swimming pools, greenhouses, or any other **structure** outside the home will be **$50 per square foot**.

With these costs in mind, you'll have to think about some **trade-offs**: if you want your home sitting on *160 acres* of land (because you just want to be able to walk out your back door to go hunting, for example), that land will cost you 160 x $5000 = $800,000 – leaving just $200,000 for your house. On the other hand, if you don't care about owning a lot of land, you could buy a *1-acre* lot for $5000, leaving $995,000 for the house! **The choice is yours, but the sweepstakes require that you <u>come within $4000 of spending the entire million.</u>**

SCALE DRAWINGS

All drawings must be drawn to scale. That means the edge of every square on the graph paper (¼") represents a certain number of feet. Our custom graph paper is 38 squares by 29 squares, so if you leave a little border **you'll have 35 by 25 squares to work with**. The scale you choose for your drawings will depend on the size of your house and your property. Here are some places to start:

   HOUSE: either **¼" = 2 feet** for a small house or **¼" = 3 feet** for a larger house.

   LAND: This *really* depends on how much you own. You might use ¼" **= 5 feet** if you only own an acre, all the way up to ¼" **= 100 feet** for huge parcels. Start with a rough drawing of your land (the *shape* of the parcel) and start thinking about the measurements of those property lines…

Dream Home Grading Guide   Name: _____   Score: _____/40

CALCULATION SHEET   /10

☺	😐	☹	Requirement:
			You have included a separate page labeled CALCULATION SHEET that shows the actual math calculations used to find the cost of each part of your project in a neat, well-organized way.
			• Labeled calculations for HOUSE correctly match drawings
			• Labeled calculations for LAND correctly match drawings
			• Labeled calculations for EXTRAS (barns, pools, etc.) correctly match drawings
			You have included a special area on this sheet labeled PROJECT BUDGET that itemizes each part of the project and shows how the sum of these parts adds up to the total project cost.
			Total project budget is between $996,000 and $1,000,000

BLUEPRINT of HOUSE   /10

☺	😐	☹	Requirement:
			You have drawn a floor plan for each story of your house on a separate sheet of graph paper.
			You have shown all rooms, doors, windows, and hallways.
			You have included features like furniture, sinks, fireplaces, etc. and included labels as needed.
			You have used graph paper, a ruler, and a template of geometric shapes to make these drawings look better.
			Accurate scale is indicated on each drawing.

LOT LAYOUT   /10

☺	😐	☹	Requirement:
			You have drawn a layout of your land on a separate sheet of graph paper that shows how the house and other features are situated on your property.
			You have included features like driveways, pole barns, gardens, pools, hiking trails, etc.
			You have shown the topography of the land – hills, valleys, ponds, woods, fields, etc.
			Accurate scale is indicated on drawing.

AREA of SPECIAL INTEREST   /10

☺	😐	☹	Requirement:
			You have included a separate drawing of at least one area of special interest on your property and have shown many details.
			You have used an appropriate scale for this drawing that is different from the scales on your other drawings.