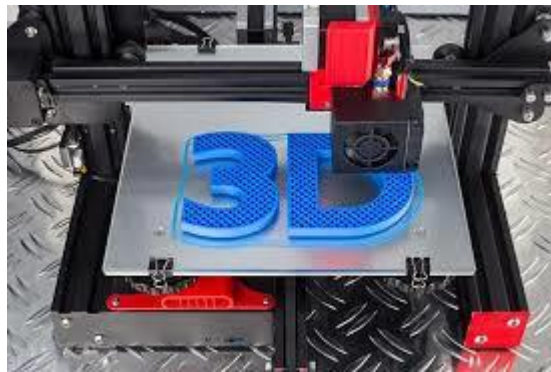Week #6 Winter 2024

Problem of the Week

Your boss, Mr. Mynchanjer would like you to print a 3d model of the office building. You start the day by preparing a model that uses .23 kilograms of filament. Happy with the results, you show it to your boss. Mr. Mynchanjer tells you that he is not satisfied with the size of his office in the model. He would like the area of the floor of his office to be twice as large (for example, if the floor of his office in your model is 3 square inches, he is requesting you make a model that has his office floor be 6 square inches). You make your second model and show it to your boss. "This is much too large" he says. "In this model, the door is too tall, make it again, but make the door 2/3 as tall as you have it here." You make a third model, and Mr. Mynchanjer is still not satisfied. He feels that this model requires too much filament. "I would like you to use half as much filament in the final model, that you did in the most recent model." This final model is satisfactory. How much filament did you use altogether today (assume all models are proportional to the real office building)?

Undergraduates may submit solutions to the Mathematics Department office, 1150 FAB **or** by email to mathpow@wayne.edu by noon 3/5/2024. Include your name, ID number, and whether you have completed Math 2030 (or higher). For more information go to https://clas.wayne.edu/math. Solutions will be posted online and throughout the math department after the deadline.