1. How many ping pong balls would it take to fill an average-sized school bus? Describe each step in your thought process.

*Length Up to 45 feet (14 m)*

*Width Up to 102 inches (2,600 mm) -> 8.5 feet*

*Height Depending on the model 10 to 12 feet. (I’ll just call it 11 feet)*

*Engine Volume 36.79 (Average Diesel Engine used in the Average School Bus)*

*First, I’ll collect the data on the bus. Then I have to find out the workable volume, I don’t want to fill the hood and engine with balls, the heat will melt the plastic and the children will get cancer. So, I’ll calculate the total volume and then subtract the engine displacement.*

*4207.5 ft^3 – 36.79 ft^3 = 4170.71 ft^3*

*Then I calculate the volume of a ping pong ball*

*.0012 Ft^3*

*Then we calculate how many fit in the bus.*

*4170.71 ft^3 / .0012 ft^3*

*We are looking at 3,475,591.666*

*We can cut off one third of one ball.*

1. Create a liquid layout with HTML, CSS, and Javascript. This layout must support the following resolutions: 1024x768, 1680x1050. Explain why you would use a liquid layout.

*You and I know that’s something very, very basic, I had a lot more fun with the math problems; Moving on. I would use a liquid layout, because I want to reach a larger demographic, I want to be able to illustrate larger quantities of information in a setting where precision meets concision.*

1. You own a license plate manufacturing company. Given a population, determine the simplest pattern that will produce enough unique plates. Since all the plates that match the pattern will be generated, find the pattern that produces the least excess plates. Use a combination of letters (A-Z) and numbers (0-9).

*This is simple combinatorics.*

* + - * *Population 2600*
      * *2 numbers and 1 letter*
      * *2600 plates*
      * *0 excess*

*City 1 Population 110 City 2 Population 250*

*2 numbers 1 letter and 1 number*

*Plates 100 260*

*Deficit 10 Excess 10*

*I’ve present a problem; one city has too many plates and the other city has too few plates. They are adults and they can work it out. At the end of the day everyone will have a plate.****No man is an island.***