IGN Application

- How many ping-pong balls will fit in an average sized school bus? … Explain your thought process.
    - My thought process broken into 3 steps
        - Find the dimensions of the balls and the bus.
            - I went online to find the dimensions of both the average sized ball and school bus. (For the purpose of the problem any reasonable estimate would suffice since I don't see school buses around me anymore.)
                - Ball
                    - Diameter: 1.58''
                    - Radius: .79''
                    - Volume: 3.944 in^3 (Check the next section to see why this is considering the volume of the smallest cube the ball fits in and not the actual volume of sphere.)
                - Bus (Assuming this size of bus)
                    - Width: 6.5'
                    - Length: 35'
                    - Height: 7.5'
                    - Volume: 1,706.25 ft^3 (2,948,400 in^3)
                    - Take into consideration the seats? (Considering an empty bus no seats)
        - Think of the mathematical approach.
            - Answer: Bus_Volume(in^3) / Ball_Volume(in^3)
                - **~747,506**
        - Use logic to take into account the real world error of the problem.
            - Using volume would be the best approach to this problem but because the balls only touch at one spot there will be empty space not taken up by them so can't be considered "take up". To solve this you can consider the smallest cube the ball fits in and use that for the volume calculation.
            -

Or if we scratch the idea that we are using a standard school bus and assume we are using the magic school bus…As many ping-pong balls as you can imagine will fit.