Quiz Chapter 1 & 2

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1. The area of the 48 contiguous states is $3.02 \cdot 10^6 [mi^2]$. Assume that these states are completely flat (no mountains and no valleys). What volume, in liters, would cover these states with rainfall of two inches? ($1[L] = 1000[mL]; mL = cm^3; 1[mi] = 1609[m]; 2.54[cm] = 1[in]; 100[cm] = 1[m]$)

$$A_{base} = 3.02 \cdot 10^6 [mi^2] = 7.82 \cdot 10^{12} [\text{m}^2]$$

$$h = 2[in] = .0508[\text{m}]$$

$$V = Ah = 7.82 \cdot 10^{12} \cdot .0508 = 3.973 \cdot 10^{11} [\text{m}^3]$$

$$3.973 \cdot 10^{11} [\text{m}^3] = 3.97 \cdot 10^{14} [\text{L}]$$