Problems - 3.7 Cantor Set

(A) Use the geometric series formula (from Calc 2) to show that

$$\sum_{n=1}^{\infty} \frac{2}{3^{2n}} = \frac{1}{4}$$

Conclude that $\frac{1}{4}$ is in the Cantor Set.

(B) Let c be any point in the Cantor Set, and let I be an open interval containing c. Show that I also contains points that are not in the Cantor Set.

(C) Let F be a family of opens intervals which covers the Cantor Set. Show that a finite subfamily of F covers the Cantor Set.