



need to do as
out some from the
volume states.

BRITISH EMBASSY
BELGRADE

To see if

T compact so ~~can divide~~ T into

can ~~be~~ T in an N -D **box** of volume V
contain

Then divide this box into $V \rightarrow V$ is fixed
 d^N boxes of ~~the~~ sides d .

then for each box ~~choose~~ if $\text{box} \cap T \neq \emptyset$.

take a point within the box and give a ball radius

$d\sqrt{N}$ so the ball contains the box



~~so the set of balls has~~ V
each ball has volume ~~is~~ $\leq \underbrace{(2d\sqrt{N})^N}_{\text{diam}}$

so all balls have total volume

$$\leq \frac{V}{d^N} (2d\sqrt{N})^N$$

$$\text{and } \sum_j (2d\sqrt{N})^{N+1} \leq d^N V 2^N \sqrt{N}^N$$

take $d \rightarrow 0$. $d \rightarrow 0$ and
done!