Lemma: f cts $\Rightarrow$ f separable.

Proof: ~~Divide~~ consider $\mathbb{Q}^n$ ~~the lattice~~

with pnts $x = (x_1, \dots, x_n)$ let $D = \bigcup$ lattices

$x_i = j 2^{-N}$ $j = 0, \dots, 2^N$ D countable

~~Then sup~~ $\exists x_k^n \to$ s.t. $f(x_n) \nearrow \sup_T f$

sup attained at a pnt x'

if T compact ~~then~~ $x_k \to x'$ s.t.

and taking a subsequence y_n on the lattice D

tending to x'

then $f(y_k) \to f(x')$ by cty.

so in particular sup is attained

(apply 11.2.29 b)! to show (11.2.29 b!)$_n$

$\mathbb{P}(\|h(t_{mj}) - u\| \leq \sqrt{n}\, C_\varepsilon \operatorname{diam}(B_{mj}))$ for (11.2.29c!)

$= \int_{u \text{ s.t. } \|h(t_m)\| \ldots} \mathbb{1}[\|h(t_{mj}) - u\| \leq \sqrt{n}\, C_\varepsilon \operatorname{diam}(\,)]\, p\, h(t_{mj})$

$\boxed{\text{PTO for stuff!}}$