④ ~~By~~ F is cts,

so by Theorem 2 of ~~Tsite~~ Tsirel'son,

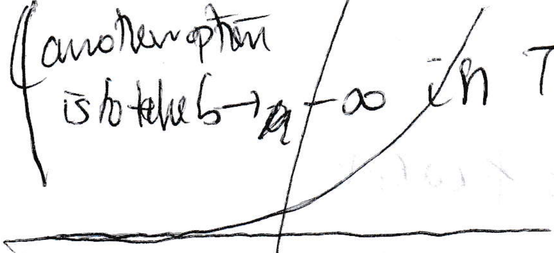
Need to touch onto much of the literature on this!

For $a > b_t$, $p_t = F_t'(a)$ is bounded by a f^n of b_t

So enough to show that $\sup_t b_t$ is bounded.

Note have $p(x) \to 0$ as $x \to 0$

(another option is to take $b \to -\infty$ in Thm 2?)



may need to go into the proof to check this one!

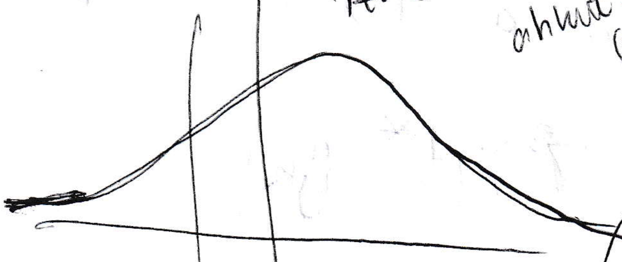
$F(a) > 1/2$
$\Rightarrow u > b_t$!

so b_t upper bounded

F is increasing
$\Rightarrow p_t > 0$

need to think about $a < b_t$ though!

what about $\frac{a_t}{(a-b)^2}$
$\to 0$ as $a \to \infty$



Apply a_t terminant functions!

So at some u, all $F_t(u) < \varepsilon$.
$\Rightarrow \forall a > u$;

use this to show

use that $1 - F_t(u)$ ~~is~~ bounded by a $f^n \to 0$

To show this, note that

$1 - F_t(u)$ is bounded e.g. using EC Euler characteristic

or using inequalities in Adler chapter 4

The bounds depend on f^n's of $\mathrm{Var}(\nabla^3 f(t) \mid \nabla f(t), \nabla^2 f(t))$

which is cts on a compact set so bounded in s, t.

i.e. $\exists$ upper bound.