$$= \int_0^{z} \int_{A^{-n}} f(x_1, \ldots, u - \sum_{-n} x_i)\, dx\, du.$$

$$\text{dem} = \int_{A^{-n}} f(x_1, \ldots, \tfrac{z}{A} - \sum_{-n} x_i)\, dx_i + \int \longleftrightarrow$$

each integral is ~~marginally~~ cts. in z so okay!

i.e as f is a Gaussian pdf.
and can bound z.

$$f(a|L) = \frac{f(a, L)}{f(L)}$$

$\mathbb{E}[L \mid \nabla f(t)]$
is probably $\boxed{\textbf{bounded}}$

$$\int_T \mathbb{E}[\cancel{\delta_\varepsilon(Z)}\ \delta_\varepsilon(\nabla X(t))\ L\ \}\ \cancel{I[A]}]$$

$$= \int_T \mathbb{E}[\delta_\varepsilon(\nabla X(t))\ \underbrace{\mathbb{E}[L \mid \nabla X(t)]}_{\text{bounded.}}] \quad \| t - t_0 \|$$

$$\boxed{\int_T p_{\nabla X(t)}(0)\, dt} = \int_T \mathbb{E}[\delta_\varepsilon(\nabla X(t))] = \int_T \int_{\mathbb{R}^n} = p_\nabla$$

$\int_T \cancel{p_{\nabla}}(0)$