

$$P(A | B=b).$$

$$P(A | B) = \int P(A | B=b) db ??$$

sup

$$X(t/\sqrt{n}) - u + 1$$

$$P(X, Y \in A \times B) = \int_{A \times B} P_{X,Y}(x,y) dx dy.$$

$$P_{X|Y}(x|y) = \frac{P_{X,Y}(x,y)}{P_X(x)}$$

$$= \lim_{\epsilon \rightarrow 0} \frac{\int_{B_\epsilon(x,y)} P_{X,Y}(x,y) dx dy}{\int_{B_\epsilon(x)} P_X(x) dx} \quad \text{by}$$

$$\lim_{\epsilon \rightarrow 0} \frac{\int_{B_\epsilon(x_0)} P_{X,Y}(x,y) dx}{\int_{B_\epsilon(x_0)} P_X(x) dx}$$

by Leb cty thm!