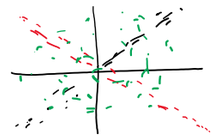
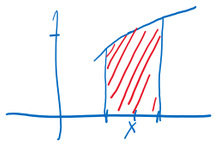
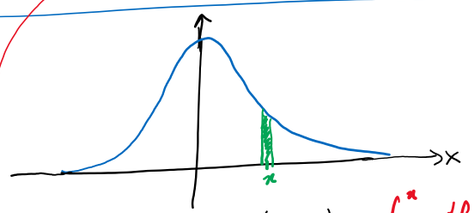
COMP. MATH. L6

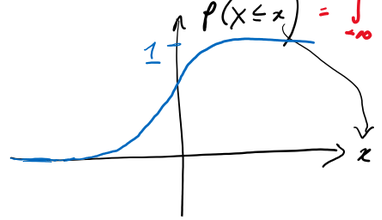




$$p(x) \approx \int_{x-\varepsilon}^{x+\varepsilon} pdf \, dx$$



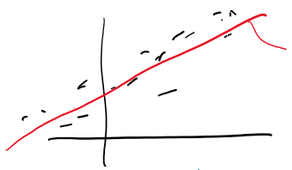
$$p(X \le x) = \int_{-\infty}^{x} pdf(x)\,dx$$



$$p(x) \approx \int_{x-\varepsilon}^{x+\varepsilon} pdf(x)\,dx$$

$$= \int_{-\infty}^{x+\varepsilon} pdf(x)dx - \int_{-\infty}^{x-\varepsilon} pdf(x)\,dx$$

$$= cdf(x+\varepsilon) - cdf(x-\varepsilon)$$



$$p(x,y) = p(y|x)$$

$$\Rightarrow p(y|x)\,p(x) = p(x|y)\,p(y)$$

$$\Rightarrow p(y|x) = \frac{p(x|y)\,p(y)}{p(x)}.$$