

Name the following PMF/PDF/formula

- $p^x(1-p)^{1-x}$

- $\frac{1}{\sigma\sqrt{2\pi}}e^{\frac{-(x-\mu)^2}{2\sigma^2}}$

- $\frac{1}{\sqrt{(2\pi)^d|\Sigma|}}\exp(-\frac{1}{2}-(x-\mu)^T\Sigma^{-1}(x-\mu))$

- $$\begin{cases} \lambda e^{-\lambda x} & \text{if } x \geq 0 \\ 0 & \text{else} \end{cases}$$

- $\int_{a_1}^{a_2} \int_{b_1}^{b_2} f_{X,Y}(x,y) dx dy$

- $$\begin{cases} \frac{1}{b-a} & \text{if } a \leq x \leq b \\ 0 & \text{else} \end{cases}$$

- $$\begin{cases} \frac{1}{B(a,b)x^{a-1}(1-x)^{b-1}} & \text{if } 0 < x < 1 \\ 0 & \text{else} \end{cases}$$

- $\frac{\beta^\alpha}{\Gamma(\alpha)}x^{\alpha-1}e^{-\beta x}$

- $\frac{1}{B(\alpha)} \prod_{i=1}^K x_i^{\alpha_i-1}$  where  $B(\alpha) = \frac{\prod_{i=1}^K \Gamma(\alpha_i)}{\Gamma(\sum_{i=1}^K \alpha_i)}$

- $\sum_{i=1}^K P(i) \log \frac{P(i)}{Q(i)}$