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$$P(X = x) = e^{-\lambda}\frac{\lambda^x}{x!}$$

x=0,1,2,3...

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$$= 0.09022$$

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Ex: If births in India occur randomly at an average rate of 2 births per 3 seconds.
What is the probability that we observe 5 births in a 6 seconds?

$$P(X = x) = e^{-\lambda}\frac{\lambda^x}{x!}$$

$$P(X = 5) = e^{-4}\frac{4^5}{5!}$$

$$= 0.15629$$