$$
P\left(\not \subset 6^{\prime} s, 3 \text { dice }\right)=1\left(\frac{5}{6}\right)^{3} \text { is } \begin{array}{ll}
2 \text { ar } \\
\text { not }
\end{array}
$$


zee r one two three

Calculate the probability for each of the possibilities, put those values in a wave, and plot a distribution.



Estimate the average number of 6's rolled.
A) 0
B) Between 0 and 1
C) 1
D) Between 1 and 2
E) 2





The Poisson distribution
(1 event per minute)
average rate of occurrence actual \#events in even time period varies

$$
\begin{aligned}
& \text { prob expected } 1 \text { got something else } \\
& \text { stats Poisson PDF }(x, \lambda)=\frac{e^{-\lambda} \lambda^{\mu}}{x!}
\end{aligned}
$$

Let's consider a process that has an average of 1 event per minute.
Could there be 0 events in 1 minute?

Calculate the probability of $0,1,2,3,4$ events in 1 minute when the average rate is 1 event per minute. (Make a wave and display it.)

$$
\begin{aligned}
& \text { splay it.) } \\
& \exp (x)=e^{x} \\
& \text { Poisson }=\frac{e^{-\lambda} \lambda^{x}}{x!}
\end{aligned}
$$



