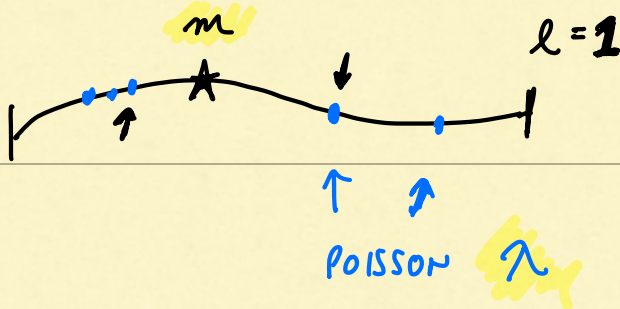
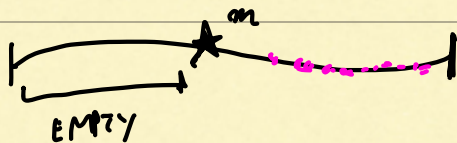


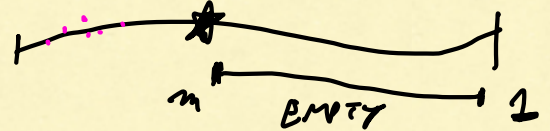
PS4 B



i) $\mathbb{P}(L_1 = 0)$



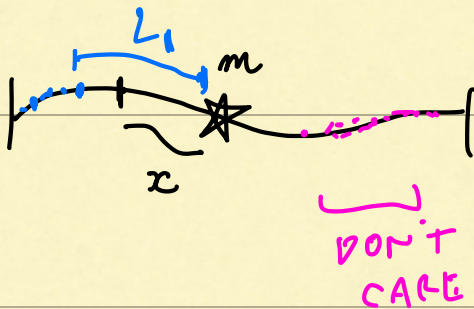
iii) $\mathbb{P}(R_1 = 1)$



ii)

$\mathbb{P}(L_1 < x) = ?$

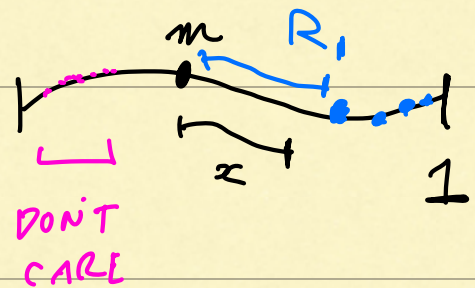
$0 < x < m$



iv)

$\mathbb{P}(R_1 > x) = ?$

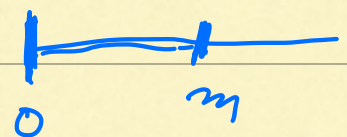
$m < x < 1$



i) # EVENTS
 $k = 0$ COUNTING

$\mathbb{P}(k=0) = \frac{\lambda^k e^{-\lambda}}{k!}$

$\mathbb{P}(L_1 = 0)$



$$= \frac{e^{-\lambda m}}{\lambda m}$$

CHECK

λ RATE

$$\lambda \rightarrow 0$$

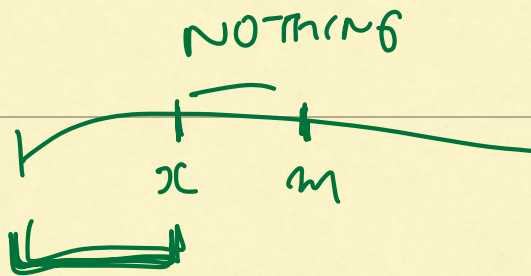


$$\lambda \rightarrow \infty$$

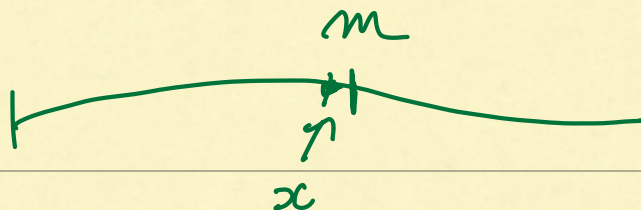


$$\Rightarrow \underline{P(L_1 = 0)} \rightarrow 0 \text{ AS } \underline{\lambda \rightarrow \infty} \quad \checkmark \quad \leftarrow$$

$$\text{ii) } P(L_1 < x) \stackrel{?}{=} e^{-\lambda(m-x)}$$



$$\text{AS } x \rightarrow m$$



$$P(L_1 < x) \rightarrow 1$$