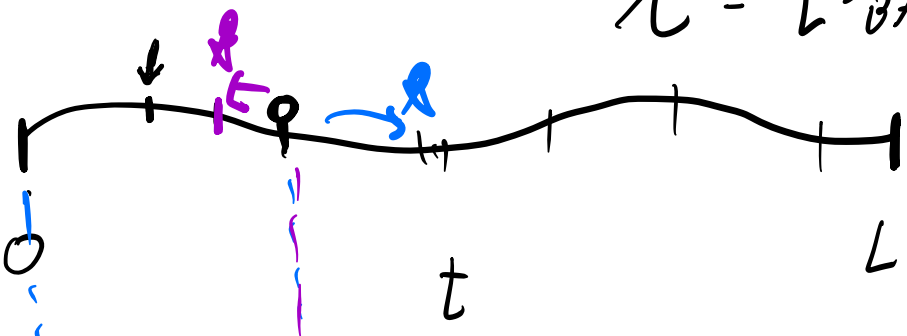
DNA

$\lambda = [\frac{1}{\text{BASEPAIR}}]$

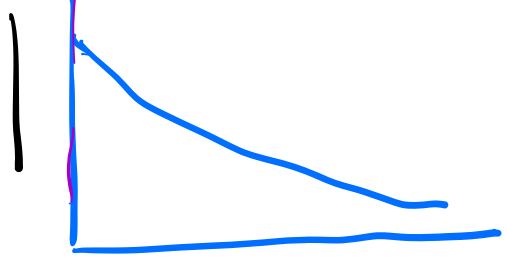


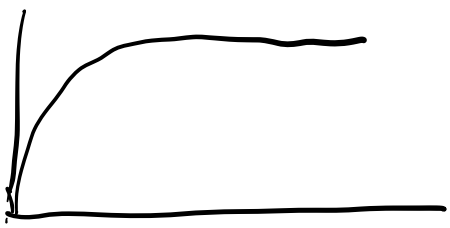
DENSITY

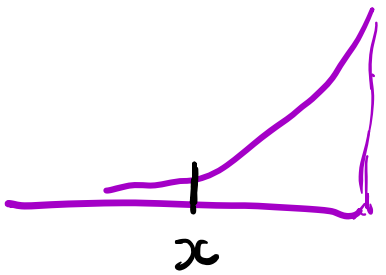
P_T

CUMU

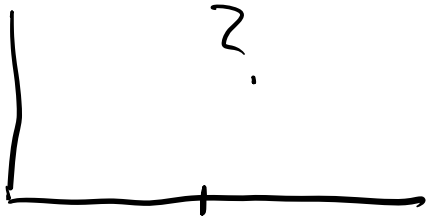
F_T

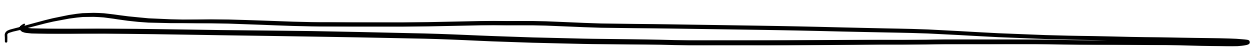


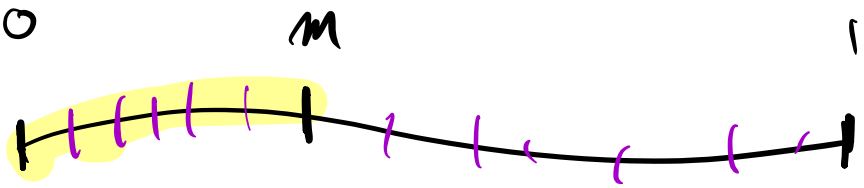




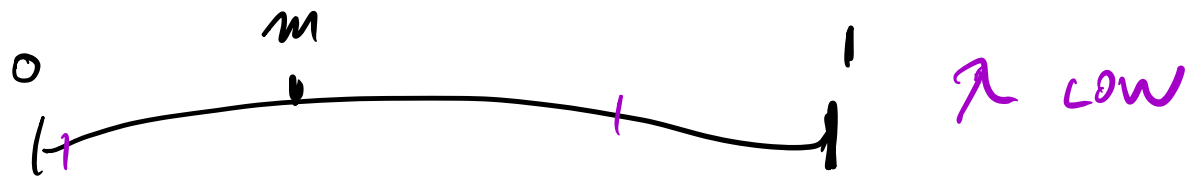
P_T







λ HIGH



λ low

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

CHECKS:

As $\lambda \to$ low, 0, $\mathbb{P}(L_1 = 0) \to 1$ ✓

$\lambda \to \infty$ $\mathbb{P}(L_1 = 0) \to 0$ ✓

$m \to 0$ $\mathbb{P}(L_1 = 0) \to 1$ ✓

i) $\mathbb{P}(L_1 = 0) = e^{-\lambda m}$ ✓

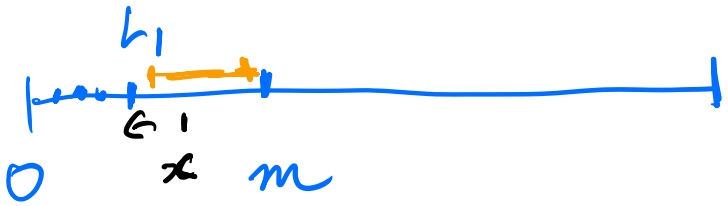
ii) $\mathbb{P}(L_1 < x) = 1 - e^{-\lambda x}$

CHECK: $x = m$

$\mathbb{P}(L_1 < m) = 1 - \mathbb{P}(L_1 = 0)$

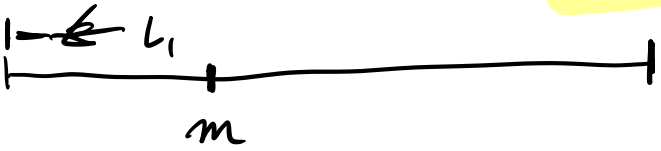
$= 1 - (1 - e^{-\lambda m})$

$$\mathbb{P}(L_1 < x) = e^{-\lambda(m-x)}$$



CHECK $x = m$

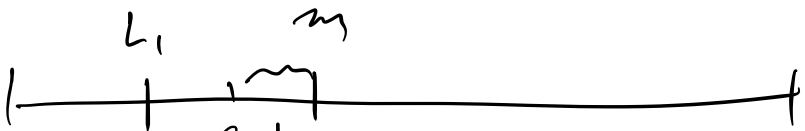
$$\mathbb{P}(L_1 < m) = 1$$



HIGH $\lambda \to \infty$

$\mathbb{P}(L_1 < x) \to 0$

ANY $x < m$



$(m-x)$