

$$\begin{aligned} a) \int_a^b \lambda e^{-\lambda x} &= -e^{-\lambda x} \Big|_a^b = (-e^{-\lambda b}) - (-e^{-\lambda a}) \\ &= -e^{-\lambda b} + e^{-\lambda a} \end{aligned}$$

$$b) 0 + 1 - e^{-\lambda b}$$

$$c) 0$$