

Question 01: Compute

$$\lim_{\theta \rightarrow -\infty} P(\theta)$$

Answer:

$$\begin{aligned} \lim_{\theta \rightarrow -\infty} P(\theta) &= \lim_{\theta \rightarrow -\infty} c + \frac{1-c}{1+e^{-a(\theta-b)}} \\ &= \lim_{\theta \rightarrow -\infty} c + 0 \\ &= \lim_{\theta \rightarrow -\infty} c \\ &= c \end{aligned}$$