Q4)

$\rightarrow$ $x_{(1)} < x_{(2)} < \cdots < x_{(n-13)} \cdots < x_{(n)}$ --- (given)

where $x_{(1)} = 0$ and $x_{(n)} = \theta$

$$p.d.f = \frac{1}{\theta}$$

Now, $\exists\ \varepsilon > 0$, such that.

$$|x_{(n)} - \varepsilon| > 0.$$

when $n >> 0$

now, $X_{(n-13)} < X_{(n)} = \theta$.

we know that.

$$X_{(n-1)} > X_{(n)} - \varepsilon$$
$$X_{(n-1)} > \theta - \varepsilon.$$

$$\therefore X_{(n-13)} > \theta - \varepsilon.$$

but $(X_{(n-13)})$ can never be greater than $X_n = \theta$.

So, it is trapped in $\theta - \varepsilon$ and θ

$\therefore$ ~~then~~ where ε is tiny.

when n is huge.

It pushes $X_{(n-13)}$ nears to θ

so $X_{(n-13)} \longrightarrow \theta$