C_{00}
or

(8) The normed space $(\Phi, \|\cdot\|_\infty)$ is not Complete.

(4)

Let $x_1 = \langle 1, 0, 0, \ldots \rangle$

$x_2 = \langle 1, \frac{1}{2}, 0, \ldots \rangle$

$\vdots$

$x_n = \langle 1, \frac{1}{2}, \frac{1}{3}, \ldots, \frac{1}{n}, 0, \ldots \rangle$

$\therefore (x_n) \in \Phi$

Let $x = \frac{1}{n}$.

$x_n \to x$ as $n \to \infty$.

So x is a limit point of Φ.

$\Rightarrow x \in \bar{\Phi}$.

but $x \notin \Phi$.

$\Rightarrow \Phi$ is not closed.

Also, $\Phi \in l^\infty$ where l^∞ is Banach space.

So Φ is not Complete.

(9) The space $(Q, \|\cdot\|)$ is not Complete, where $\|\cdot\| = |\cdot|$;

Let $x_1 = 1$

$x_2 = 1 + 1$

$x_3 = 1 + 1 + \frac{1}{2!}$

$\vdots$

$x_n = 1 + 1 + \frac{1}{2!} + \frac{1}{3!} + \ldots + \frac{1}{(n-1)!}$

$x_n \in Q \quad \forall n$.

As $n \to \infty$ $x_n \to e$ but $e \notin Q$.

$\Rightarrow Q$ is not closed.

& $Q \subseteq \mathbb{R}$, where $\mathbb{R}$ is Complete.

$\Rightarrow Q$ is not Complete.