Math 325. Quiz #4

(1) State the definition for a sequence $\{a_n\}_{n=1}^{\infty}$ to **converge** to a real number L.

(2) *True or false*, and *justify* with a short proof or example:
If $\{a_n\}_{n=1}^{\infty}$ converges to L, then $a_n = L$ for some natural number n.

(3) *True or false*, and *justify* with a short proof or example:
If $\{a_n\}$ converges to 3, then there is some natural number N such that for every natural number $n > N$, we have $a_n > 2.5$.

Bonus: *True or false*, and *justify*:
There is a sequence of integers that converges to an irrational number.