THE CHINESE UNIVERSITY OF HONG KONG Department of Mathematics

MATH 2050A Tutorial 2

- 1. Find the limit of the following sequences by definition
 - (a) $\lim \frac{n}{n^2+1}$
 - (b) $\lim \frac{2n}{n+2}$
- 2. Show that $lim(\sqrt{n^2 + 1} n) = 0$.
- 3. Show that if $x_n \ge 0$ for all $n \in \mathbb{N}$ and $\lim(x_n) = 0$, then $\lim(\sqrt{x_n}) = 0$.
- 4. Theorem 2.5.5 The unit interval $[0,1] := \{x \in \mathbb{R} : 0 \le x \le 1\}$ is not countable.