exercise 1:

(i). For α in $\mathbb{R}$ determine $\lim_{x\to\infty} \frac{e^x}{x^\alpha}$.

(ii). For β in $\mathbb{R}$ determine $\lim_{x\to 0^+} \frac{e^x - 1}{x^\beta}$.

exercise 2:

(i). Find the limit of the sequence $a_n = (1 + \frac{t}{n})^n$ where t in $\mathbb{R}$ is a parameter.

(i). Find the limit of the sequence $b_n = (1 + \frac{1}{n^2})^n$.

exercise 3:

Textbook problem 5.1.A: a, b, k.