

You are **strongly** encouraged to work in groups, following the procedure as in homework MS09.

Below is a summary of the handout: [Stone-Weierstrasse Theorems](#).

Recall 1. About the metric space $(C(K, \mathbb{K}), d_\infty)$.

Theorem 2 (Weierstrass Approx. Thm.). *The collection of real polynomial is dense in $C([0, 1])$.*

Definition 3. separates points (of S) and algebra (of functions over \mathbb{K}).

Theorem 4 (Stone-Weierstrass theorem, real version so $\mathbb{K} = \mathbb{R}$).

Theorem 5 (Stone-Weierstrass theorem, complex version so $\mathbb{K} = \mathbb{C}$).

Lemma 6. *Uniform approximation of the square root function on the unit interval by polynomial.*

Metric Space Exercise 10.

Do the following Stone-Weierstrass Exercises from the handout [Stone-Weierstrasse Theorems](#).

The [LaTeX](#) file of this handout might save your time.

MS 10a. Do SW 1.

MS 10b. Do SW 2.

MS 10c. Do SW 3.