Exercises, Digital Signal Processing

8'th lecture

1) Given a periodic continuous-time signal $x(t)$. The time interval $[-1; 1[$ (in seconds) represents one period of the signal in which $x(t) = e^{-t}$.
   a) Plot $x(t)$ in the interval $t \in [-3; 3[$ sec.
   b) Derive an expression for the Fourier Series $X[k]$. *Hint*: Do the integration over the interval $[-1; 1[$.
   c) Find and plot $|X[k]|$ for $k \in [-30; 30]$.

2) Problem 4, p. 713

3) Problem 5, p. 713, question a and b.

4) Problem 7, p. 714