Fourier transforms and delta functions

Compulsory problems:
Chapter 7: 12.6, 12.18, 12.22 (see comment below).
NB! Misprint in problem 7.12.22! The correct definition of this Bessel function is
$j_1(\alpha) = -(\alpha \cos \alpha - \sin \alpha)/\alpha^2$

Chapter 8: 11.14, 11.15.

Extra problems: 7.12.12, 7.12.25