Homework for week 05

From the textbook:

13.5, 13.6 14.4, 17.1, 17.2

Additional problem:

Given $-\infty < a < b < \infty$ let

$$\chi_{a,b}(x) = \begin{cases} 1 & \text{if } a < x < b, \\ 0 & \text{otherwise} \end{cases}$$

Find $\hat{\chi}(\omega)$.