

HOMEWORK #8 (15.3)

Due on May 17

- 1) In this problem, find the Fourier integral representation of the given function.

$$f(x) = \begin{cases} 0, & x < -1 \\ -1, & -1 < x < 0 \\ 2, & 0 < x < 1 \\ 0, & x > 1 \end{cases} \quad (\text{Problem 1, page 750})$$

- 2) In this problem, find the Fourier integral representation of the given function.

$$f(x) = \begin{cases} 0, & x < 0 \\ e^{-x}, & x > 0 \end{cases} \quad (\text{Problem 5, page 750})$$

- 3) In this problem, represent the given function by an appropriate cosine or sine integral

$$f(x) = \begin{cases} |x|, & |x| < \pi \\ 0, & |x| > \pi \end{cases} \quad (\text{Problem 9, page 750})$$

- 4) In this problem, find the cosine and sine integral representations of the given function

$$f(x) = xe^{-2x}, \quad x > 0 \quad (\text{Problem 15, page 750})$$