

Assignment 6: The Fourier Transform

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October 31, 2019

Contents

1 Problem 1	1
2 Problem 2	1
3 Problem 3	1
4 Problem 4	1
5 Problem 5	1
6 Problem 6	1

1 Problem 1

Assuming the hint, we have

$$\lim_{|\xi| \rightarrow \infty} \hat{f}(\xi) = \lim_{\xi' \rightarrow 0} \frac{1}{2} \int_{\mathbb{R}^n} (f(x) - f(x - \xi')) \exp(-2\pi i x \cdot \xi) \, dx.$$

2 Problem 2

3 Problem 3

4 Problem 4

5 Problem 5

6 Problem 6