

Physics 3800: Assignment #7

DUE: Wednesday March 2, 2016

Problems:

1. **Problem 24.20 on page 869**

2. **Problem 25.9 on page 922**

3. **Hyperbolic functions**

Evaluate the following integral;

$$\int_{-\infty}^{\infty} dx \frac{\exp(ax)}{\cosh^2(\pi x)} \quad (1)$$

where $-2\pi < a < 2\pi$ and a is real.

4. **Fourier transform**

Evaluate the Fourier transform;

$$\int_{-\infty}^{\infty} dx \frac{A \exp(ikx)}{\Gamma^2 + (x^2 - x_o^2)} \quad (2)$$

where A is real, Γ is real and x_o is real.