

Problem Set 3

Problem 3.5(b)

You may need the following integral

$$\int_{-\infty}^{\infty} \frac{k^2 \cos^2\left(\frac{ka}{2}\right)}{\left(k + \frac{\pi}{a}\right)^2 \left(k - \frac{\pi}{a}\right)^2} dk = \frac{\pi a}{4}$$

[Courtesy of TA (Ryan Leung)]

useful in doing Problem 3.5 part (b).

The integral can be done by contour integration (complex variables).

Hui.