

Homework 9. Due Nov. 21

214/3,4,12

214/13(variant). Use the hints of 214/13 to compute the Fourier Transform of the gaussian $e^{-x^2/2}$, that is

$$\frac{1}{\sqrt{2\pi}} \int_{-\infty}^{\infty} e^{-x^2/2} e^{-ix\xi} dx.$$

Ans. With the factor $1/2$ in the exponent and without the factor 2 in the cosine, one has the nice formula that the Fourier transform is the same function, namely $e^{-\xi^2/2}$.

218-19/5,7

226/1,2

9. Make up a problem whose solution uses the same idea as problem 208/9 but involves a power other than 3. Solve the problem you just made up.