

# Math 288X — Assignment 6

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Due 2023/10/30 3pm in class or by email

1. Let

$$\mu(z) = \sum_{n \neq 0} 2\rho(n)y^{\frac{1}{2}} K_{ir}(2\pi|n|y)e(nx)$$

be a Maass form of level  $N$  and an eigenform of  $T_{-1}$ . Let  $E(z, s)$  be the trivial character Eisenstein series attached to the cusp  $i\infty$ . Write  $\langle |\mu|^2, E(\cdot, \bar{s}) \rangle$  in terms of the Dirichlet series

$$\sum_{n=1}^{\infty} \frac{|\rho(n)|^2}{n^s}.$$

(Hint: I suggest citing Gradshteyn–Ryzhik for the integral that appears.)