

Exercise to lecture 3 on 27.2.2017

✓ Exercise 26. Find

$$\dim_{\mathbb{C}} \mathcal{S}_{2k}(SL(2, \mathbb{Z}))$$

$$\dim_{\mathbb{C}} \mathcal{S}_{2k}(SL(2, \mathbb{Z})), \text{ for } k \in \mathbb{Z}.$$

✓ Exercise 27. Let $R_{\Gamma} = \Gamma \backslash \mathcal{H}^*$ be compact.

The equation

$$2g - 2 + \nu_{\infty} + \sum_{\text{all } p} \left(1 - \frac{1}{e_p}\right) = \frac{1}{2\pi} \mu(R_{\Gamma}) > 0$$

is proven in [Goro Shimura], Thm 2.20.

Prove that the left hand side $\geq \frac{1}{42}$.