$\begin{array}{c} {\rm Affine~Kac\text{-}Moody~Lie~algebras} \\ {\rm Homework~3} \\ {\rm due~01.12.17} \end{array}$

- 1. Find all roots, describe the root spaces and find their dimensions for the untwisted affine algebras of affine type A.
- **2.** Find all roots, describe the root spaces and find their dimensions for the untwisted affine algebras of affine type B.
- **3.** Find all roots, describe the root spaces and find their dimensions for the untwisted affine algebras of affine type C.
- **4.** Find all roots, describe the root spaces and find their dimensions for the untwisted affine algebras of affine type D.