

**Representations of affine and vertex operator algebras**  
**Ten-minutes problem 8**

Let  $V$  be the 8-dimensional irreducible representation of the group  $GL_3$ , contained as a direct summand in the adjoint representation. Compute the trace of the matrix  $\text{diag}(\varepsilon_1, \varepsilon_2, \varepsilon_3)$  in  $V$ .