Week 3 (due April 28)

Reading: Becker-Becker-Schwarz 7.1, 7.2, 7.4, Polchinski 11.1-11.4, see also Green-Schwarz-Witten vol. 1.

1. (a) Determine the spectrum of the Type I superstring at the first massive level. That is, determine how the states with lowest nonzero mass transform under the little group and the gauge group $SO(32)$. Note that since the states are massive, the little group is $SO(9)$, rather than $SO(8)$. Include both the closed and open string sectors.

(b) The same for the $SO(32)$ heterotic string.