

## Series 11

### I. Two derivations for the n-pt fn with one descendent field

1. Verify Eq. (3.111) and (3.112) in the notes.
2. Verify Eq. (3.111) and (3.112) at  $z = 0$  via the alternative derivation sketched above (3.113).

### II. The 2-pt function of descendants of different primary fields vanishes

Show this (see (3.114) and following).

### III. $T(z)T(w)$ for the free massless boson

Calculate the OPE of  $T$  with itself for the free massless boson, see (4.13).