

Series 8

I. Variation of a primary field in $d = 2$

1. Verify (3.21) starting from (3.20) for an infinitesimal transformation

$$w = z + \epsilon(z), \quad \bar{w} = \bar{z} + \bar{\epsilon}(z). \quad (1)$$

II. Correlation functions in $d = 2$

1. Derive (3.23) from (2.28).
2. Derive (3.24) from (2.32).
3. Check that (3.28) and (3.29) are equivalent to (3.27).

III. Ward identities in $d = 2$

1. Derive (3.35a-d) from (3.30a-c).
2. Verify (3.36a,b).
3. Verify (3.37a,b).