

After a brief review of Riemann surfaces, we consider partition functions of a lattice VOA on a Riemann surface of genus 2 in two separate sewing schemes and show that they differ in the degeneration point. However, a certain "normalized" partition function, the genus two Siegel theta function for the lattice, is shown to be universal though only locally, analogously to what happens for the genus 1 case where the partition function for c free bosons is a rational function of the theta function and Dedekind function.