1145-57-1110 Charles Frohman* (charles-frohman@uiowa.edu), Department of Mathematics, The University of Iowa, Iowa city, IA 52242, and Joanna Kania-Bartoszynska and Thang Le. The dimension of the Kauffman bracket skein algebra at roots of unity.

Let ζ be an *n*th root of unity and let F be a connected oriented surface of finite type having negative Euler characteristic. The Kauffman bracket skein algebra of F at ζ , $K_{\zeta}(F)$, is a finite rank module over its center $Z_{\zeta}(F)$ that has no nontrivial zero divisors. Localizing at the nonzero central elements yields a division algebra $\widetilde{K}_{\zeta}(F)$ over the field $\widetilde{Z}_{\zeta}(F)$. First we compute the dimension of the algebra as a vector space over $\widetilde{Z}_{\zeta}(F)$. Next we compute the normalized trace

$$tr: \widetilde{K}_{\zeta}(F) \to \widetilde{Z}_{\zeta}(F),$$

coming from the action of $\widetilde{K}_{\zeta}(F)$ on itself by left multiplication. Finally we show how to construct bases for the algebra coming from a pair of pants decompositions of the surface. (Received September 19, 2018)