Abstract: Let $k$ be a subring of the field of rational functions in $s$, which contains $s$. Let $M$ be a compact oriented 3-manifold, and let $K(M)$ denote the Kauffman skein module of $M$ over $k$. Then $K(M)$ is the $k$-module freely generated by isotopy classes of framed links in $M$ modulo the Kauffman skein relations. In the case of $k = \mathbb{Q}(s)$, the field of rational functions in $s$, we give a basis for the Kauffman skein module of the solid torus and a basis for the relative Kauffman skein module of the solid torus with two points on the boundary. We then show that $K(S^2)$ is freely generated by the empty link, i.e., $K(S^2)$.