Algebraic geometry II: HW 4

Feel free to discuss the problem with others, but what you write should be written by yourself (i.e., without the other person or their homework next to you!).

1. Let X be an integral scheme, and let $\mathcal{K}$ denote the sheaf whose ring of sections over an open set U is the fraction field of $\mathcal{O}_X(U)$, which in turn is isomorphic to the function field $K(X)$ of X. Show that the group of Cartier divisors on X is isomorphic to the group of global sections (i.e., sections over X) of the sheaf associated the presheaf $U \mapsto \mathcal{K}(U)^*/\mathcal{O}(U)^*$, where a superscript of star denotes the multiplicative group of units.