$$\tau_X \quad : \quad \begin{array}{ccccc} K & \longrightarrow & \mathbf{Free}(X) & \twoheadrightarrow & X \\ \downarrow & & \downarrow & & \| \\ K_F & \dashrightarrow & \mathbf{Free}(X) \sqcup_K K_F & \dashrightarrow & X \\ \downarrow & & \downarrow & & \\ K_C & =\!\!=\!\!= & K_C & & \end{array}$$