Definition (Adjunction, Version 2)**.** Let **C** and **D** be categories. An *adjunction* from **C** to **D** is given by the following data, satisfying the following conditions.

Data:

1. A functor $L : \mathbf{C} \to \mathbf{D}$ (the *left adjoint*);
2. A functor $R : \mathbf{D} \to \mathbf{C}$ (the *right adjoint*);
3. Natural transformations $\mathrm{un} : \mathrm{Id}_{\mathbf{C}} \Rightarrow L \fatsemi R$ and $\mathrm{co} : R \fatsemi L \Rightarrow \mathrm{Id}_{\mathbf{D}}$

Conditions:

1. For all objects X of **C**, it holds that

$$L\mathrm{un}_X \fatsemi \mathrm{co}_{LX} = \mathrm{Id}_{LX} \quad \text{and} \quad \mathrm{un}_{RY} \fatsemi R\mathrm{co}_Y = \mathrm{Id}_{RY}$$

i.e. that the following diagrams commute:

$$\begin{tikzcd}
LX \arrow[r, "L\mathrm{un}_X"] \arrow[dr, "\mathrm{Id}_{LX}"'] & LRLX \arrow[d, "\mathrm{co}_{LX}"] \\
 & LX
\end{tikzcd}
\qquad
\begin{tikzcd}
RY \arrow[r, "\mathrm{un}_{RY}"] \arrow[dr, "\mathrm{Id}_{RY}"'] & RLRY \arrow[d, "R\mathrm{co}_Y"] \\
 & RY
\end{tikzcd}$$

The 2-morphisms un and co are called the *unit* and *counit* of the adjunction. An adjunction is called an *adjoint equivalence* if the unit and counit are natural isomorphisms.