Definition (Equivalence of categories). An *equivalence* between two categories **C** and **D** is given by:

1. A pair of functors F, G of the form:

$$\mathbf{C} \underset{F}{\overset{G}{\rightleftarrows}} \mathbf{D}$$

2. natural isomorphisms $F \fatsemi G \cong \mathrm{Id}_{\mathbf{C}}$ and $G \fatsemi F \cong \mathrm{Id}_{\mathbf{D}}$.