Lecture 3 Exercises

1. Show that that the relations fibration on Set is a bifibration.

2. Define the action of the truth functor on morphisms.

3. Define the action of the equality functor on morphisms.

4. Show that the definition of the equality functor Eq specialises to the function mapping each set X to the equality relation $\mathsf{Eq}\, X = \{(x, x) \mid x \in X\}$ when instantiated to the relations fibration on Set.

5. Show that the equality functor is always faithful.

6. Show that the equality functor for the identity bifibration $\mathsf{Id} : \mathsf{Set} \to \mathsf{Set}$ is not full.

7. Show that the equality functor for the relations fibration on Set is full.