

MAT 313, Category Theory

Homework 4, Due Mon, Nov 23

To attempt: All exercises in van Oosten 5.1

To turn in: chap 4 #80, chap 5 # 92, 96, 101, and the following:

Let F, F' be functors from \mathcal{C} to \mathcal{D} , and let G, G' be functors from \mathcal{D} to \mathcal{E} . Let α be a natural transformation from F to F' , and let β be a natural transformation from G to G' . Show that $((\beta * \alpha)_C : C \in \mathcal{C}_0)$ is a natural transformation, where

$$(\beta * \alpha)_C = \beta_{F'C} \circ G(\alpha_C).$$