

Category Theory notes

Mac Radigan

Kleisli Triple $(M, unit, \star)$

type constructor (M)

$$Mt \tag{1}$$

unit function $(unit)$

$$t \rightarrow (Mt) \tag{2}$$

bind function (\star)

$$(Mt) \rightarrow (t \rightarrow (Mu)) \rightarrow (Mu) \tag{3}$$

Monad Laws

left unit

$$unit\ a \star \lambda b.m = n\ [a/b] \tag{4}$$

right unit

$$m \star \lambda a. unit\ a = m \tag{5}$$

associative

$$m \star (\lambda a.n \star \lambda b.o) = (m \star \lambda a.n) \star \lambda b.o \tag{6}$$