

Lambda Calculus

CS 152

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1. Common Functions

1.1. Identity

1.1.1. Definition

$$\text{id} = \lambda x.x$$

1.1.2. Example(s)

$$(\lambda x.x)M = M$$

1.2. Selection

1.2.1. Definition

$$\text{fst} = \lambda x.\lambda y.x$$

$$\text{snd} = \lambda x.\lambda y.y$$

1.2.2. Example(s)

$$(\lambda x.\lambda y.x)MN = (\lambda x.M)N = M$$

$$(\lambda x.\lambda y.y)MN = (\lambda x.N)M = N$$