

## 1 Example 2: $0 + 4$

Using the recursive definition:

$$\begin{aligned}0 + 4 &= (0 + 3) + 1 \\&= ((0 + 2) + 1) + 1 \\&= (((0 + 1) + 1) + 1) + 1 \\&= ((((0 + 0) + 1) + 1) + 1) + 1 \\&= (((0 + 1) + 1) + 1) + 1 \\&= ((1 + 1) + 1) + 1 \\&= (2 + 1) + 1 \\&= 3 + 1 \\&= 4\end{aligned}$$