

$$\begin{aligned}
 f\ 0 &= 1 \\
 f\ x\ x &= 2 \quad \downarrow \\
 f\ -\ - &= 3 \\
 \rightarrow f\ x\ y \mid x == y &= 2
 \end{aligned}$$


---

$$\begin{aligned}
 f\ 0 &= 1 \\
 f\ 1 &= 2 \\
 f\ (2^n) &= (f\ n) + 1 \quad \downarrow
 \end{aligned}$$


---

$$\begin{aligned}
 (&&) &:: \text{Bool} \rightarrow \text{Bool} \rightarrow \text{Bool} \\
 \rightarrow &\text{True} \ \&\ \text{True} = \text{True} \\
 \rightarrow &\_ \ \&\ \_ = \text{False}
 \end{aligned}
 \quad \left| \begin{array}{l} \leftarrow \\ \\ \end{array} \right.$$


---


$$\begin{aligned}
 (&&) &:: \text{Bool} \rightarrow \text{Bool} \rightarrow \text{Bool} \\
 b \ \&\ \text{True} &= b \\
 \_ \ \&\ \_ &= \text{False}
 \end{aligned}
 \quad \left| \begin{array}{l} \\ \\ \end{array} \right.$$


---

$$\Rightarrow \underline{\text{False} \ \&\ (\text{ackermann } 4\ 2 > 0)}$$

= False without computing the ackermann function!

But only with the first definition of &&