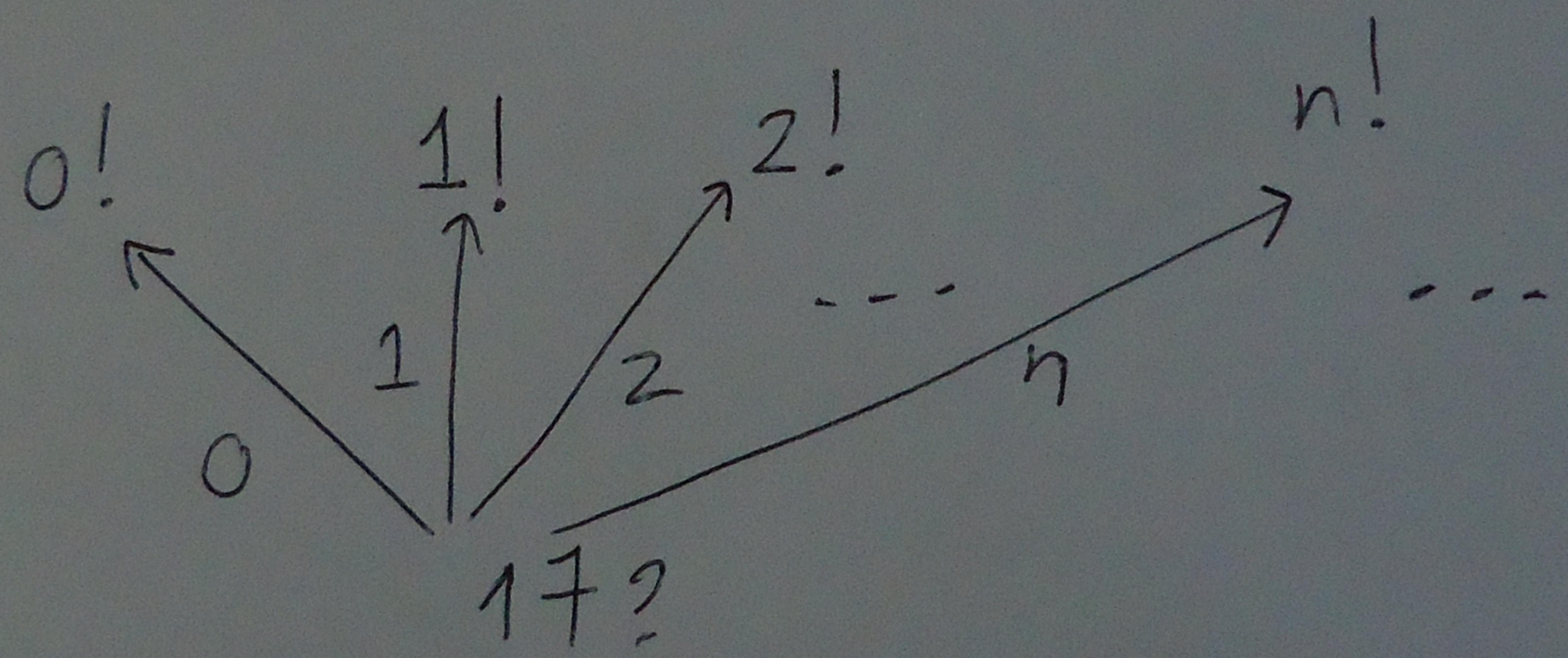


$$f: (\mathbb{N} \rightarrow \mathbb{N}) \rightarrow \mathbb{N}$$

$$f\alpha = \alpha_{17}$$

Dialogue tree of f :



? = question.

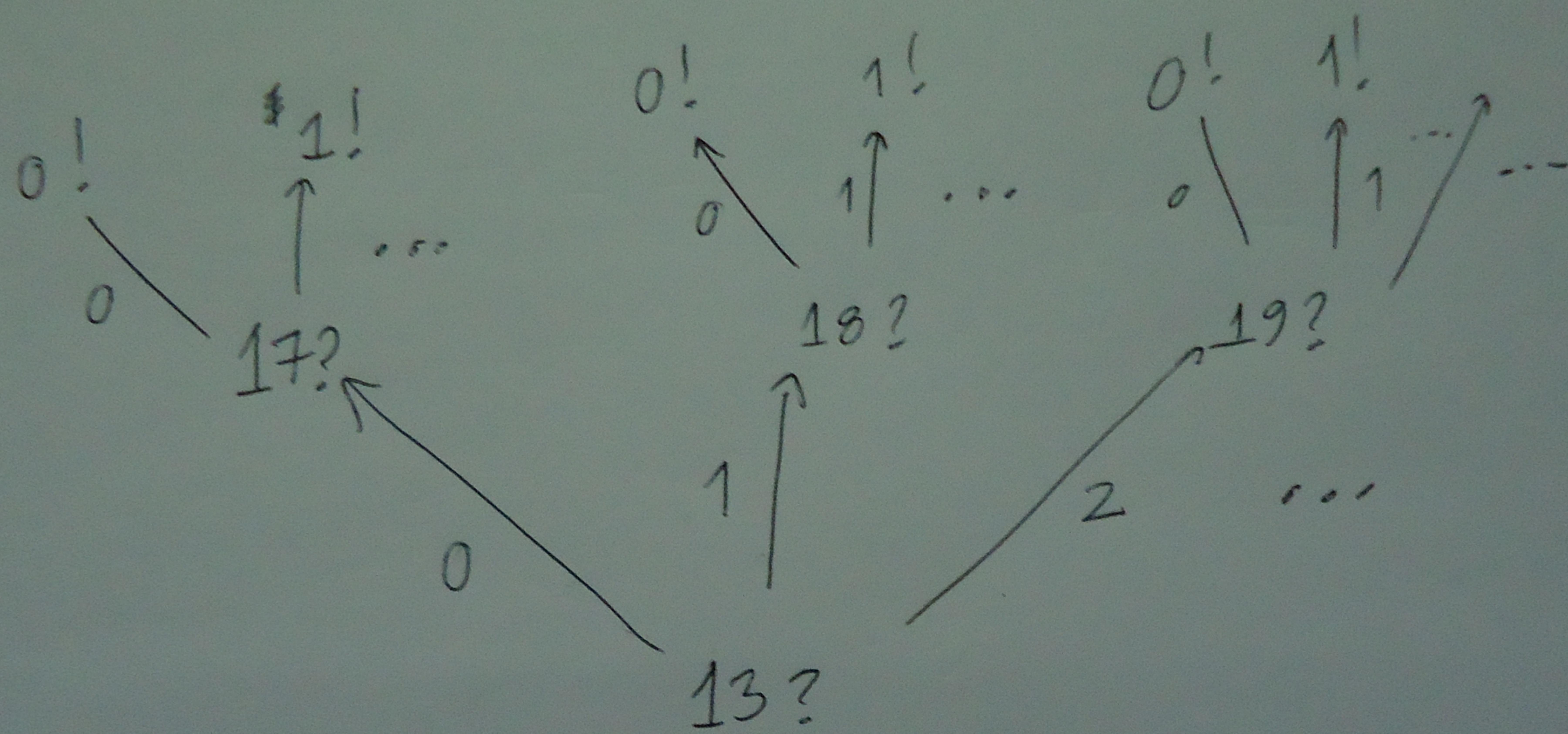
! = answer.

$n?$ = what is α_n ?

$m!$ = $f\alpha$ is m .

$$f: (\mathbb{N} \rightarrow \mathbb{N}) \rightarrow \mathbb{N}$$

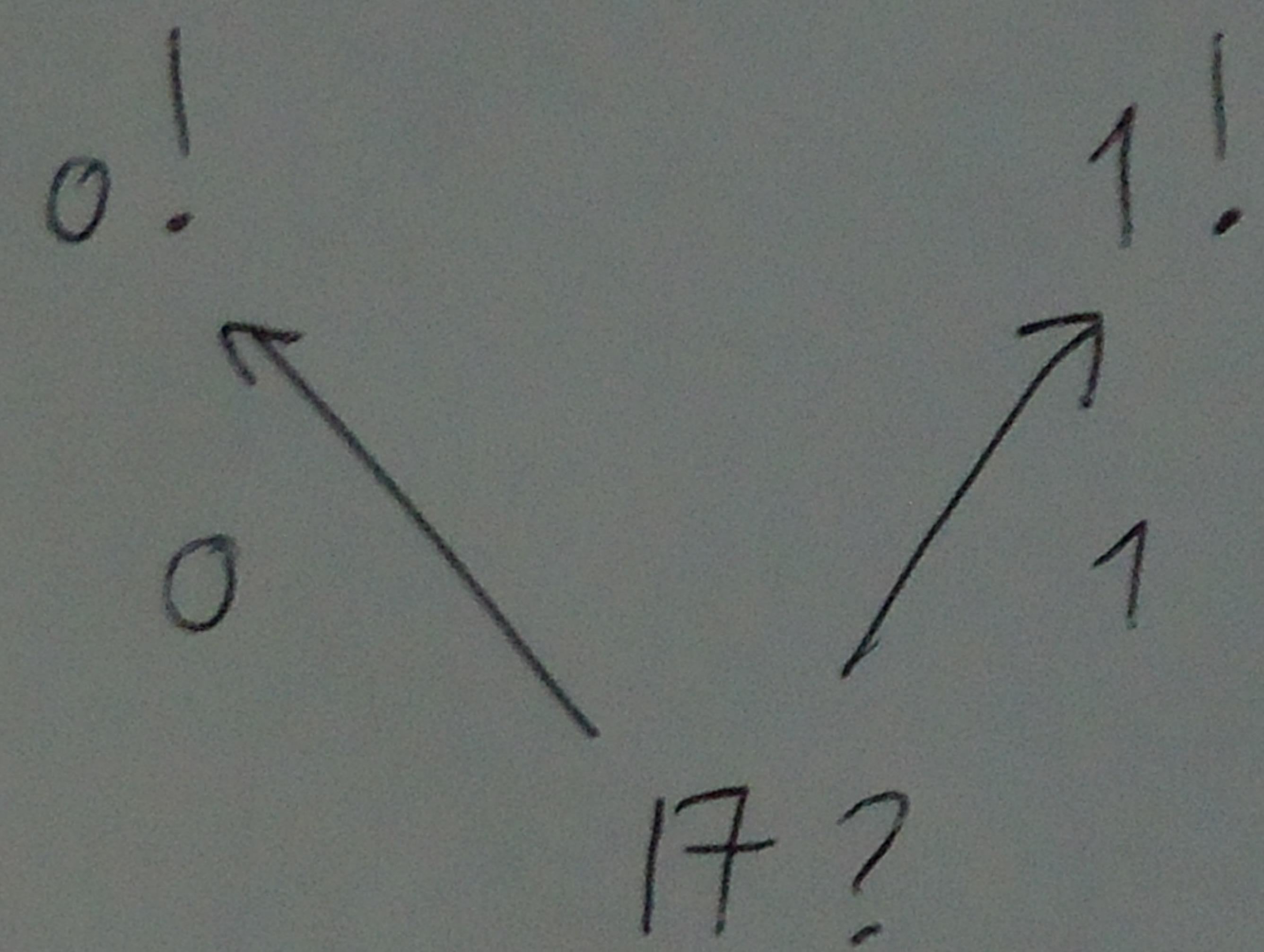
$$f\alpha = \alpha(17 + \alpha 13)$$



continuity: Given α , run the dialogue.

- The modulus of continuity of f at α is the largest question plus one. (or less)
- If no questions are asked (constant function), the modulus is zero.

$$f: (\mathbb{N} \rightarrow 2) \rightarrow \mathbb{N} \quad f \alpha = \alpha_{17}$$

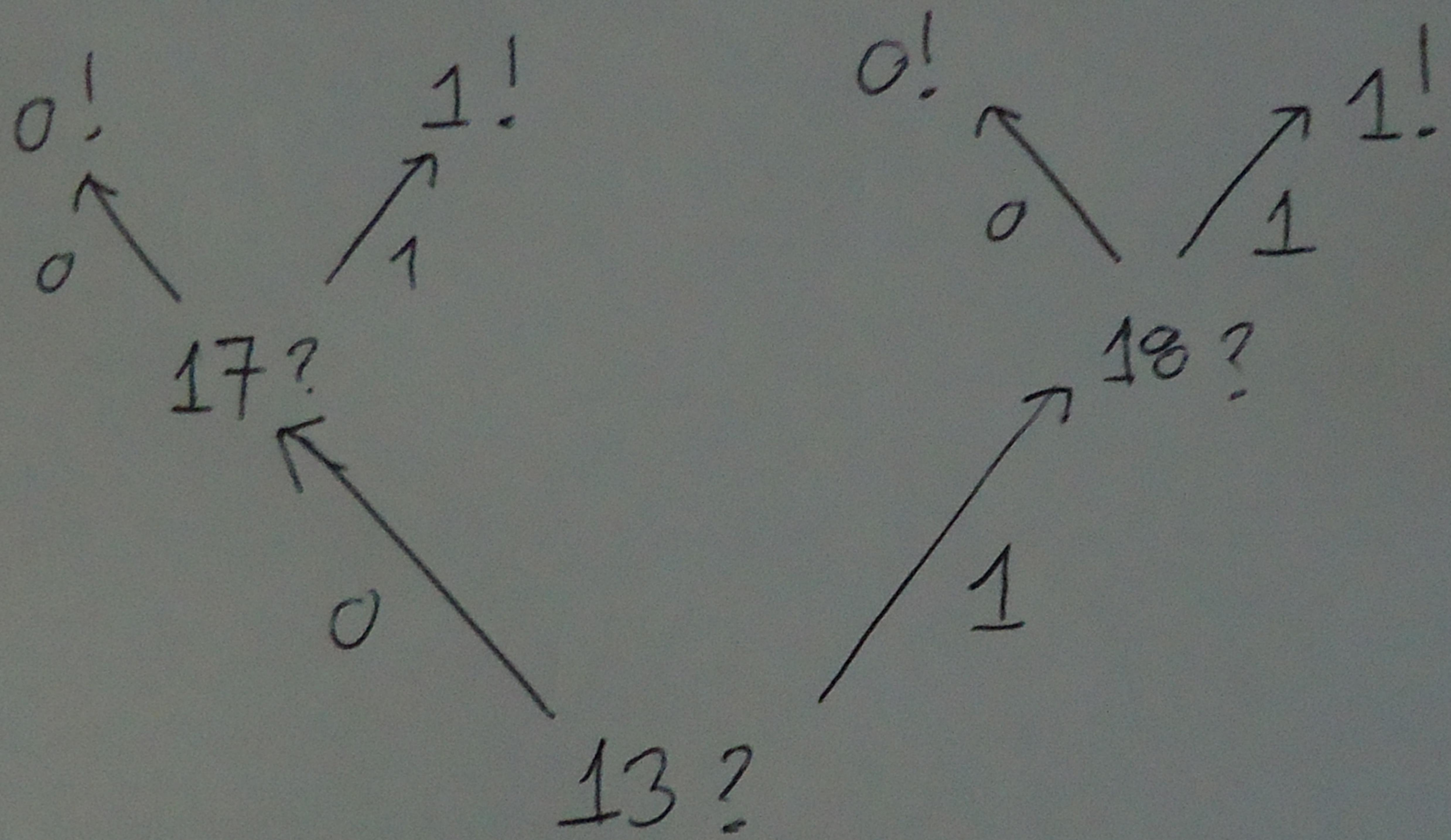


Finite tree.
Because well founded & finitely branching -
(No need to invoke König's lemma
or Fan theorem.)

Modulus of uniform continuity is 18.
Largest question plus 1

$$f: (N \rightarrow 2) \rightarrow N$$

$$f\alpha = \alpha(17 + \alpha 13)$$



modulus of uniform continuity = $18 + 1$