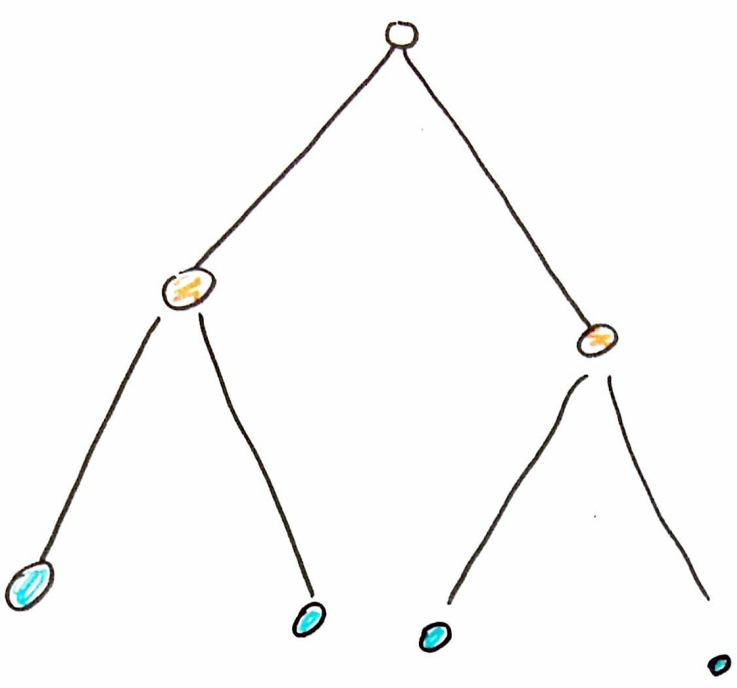
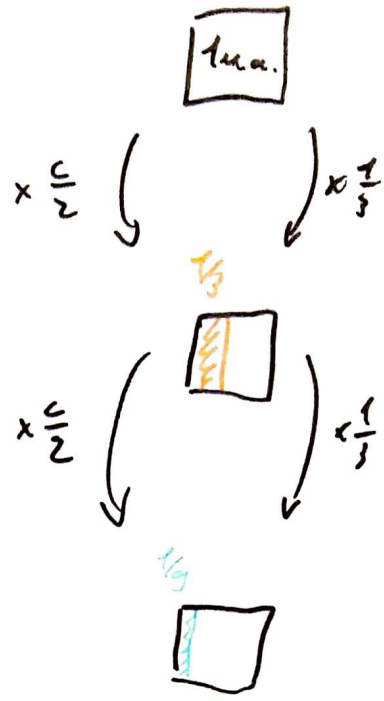
$$\sum_{0}^{n} \left(\frac{p}{q}\right)^k = \frac{1-\left(\frac{p}{q}\right)^{n+1}}{1-\frac{p}{q}} \quad \text{si } p \neq 0,q$$

Simple pour cyécans...

$\frac{p}{q} = \frac{2}{3}$





$$S_n = \sum_{0}^{n} \left(\frac{p}{q}\right)^k = \sum_{0}^{n} \left(\frac{2}{3}\right)^k$$

$$S_{n+1} = S_n + 2^{n+1} \times \left(\frac{1}{3}\right)^{n+1}$$

$$S_{n+1} = 1 + \frac{2}{3} S_n$$

Bingo!

↳ Sim IR via $\mathcal{C}^0$ et $\overline{\mathbb{Q}} = \mathbb{R}$