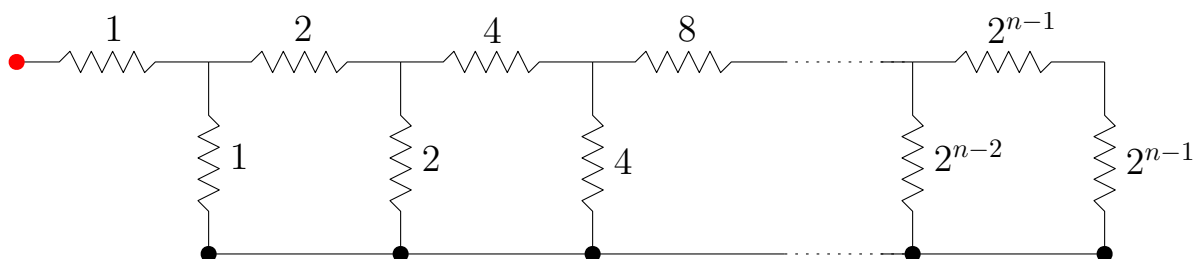


Consider the following ladder network of resistors for any integer $n \geq 1$:



A zig-zag line denotes a resistor. The *conductances* of each resistor is shown. The red node to the far left is at unit voltage; all the black nodes on the bottom of the ladder are grounded.

- Calculate the effective conductance $C_{\text{eff}}^{(n)}$ of the circuit for a few small values of n .
- Can you find the value of $C_{\text{eff}}^{(\infty)}$?