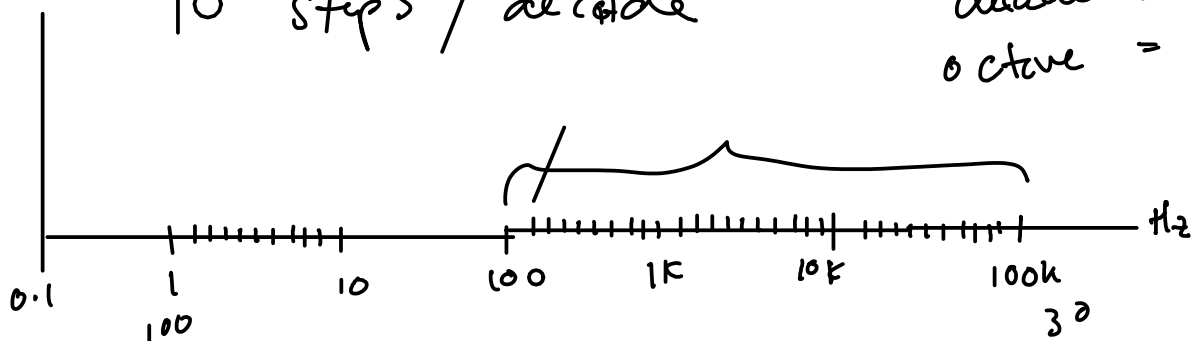


decade = 10 year  
 octave = 8 notes

100 → 100 kHz

10 steps / decade

decade = 10x f  
 octave = 2x f

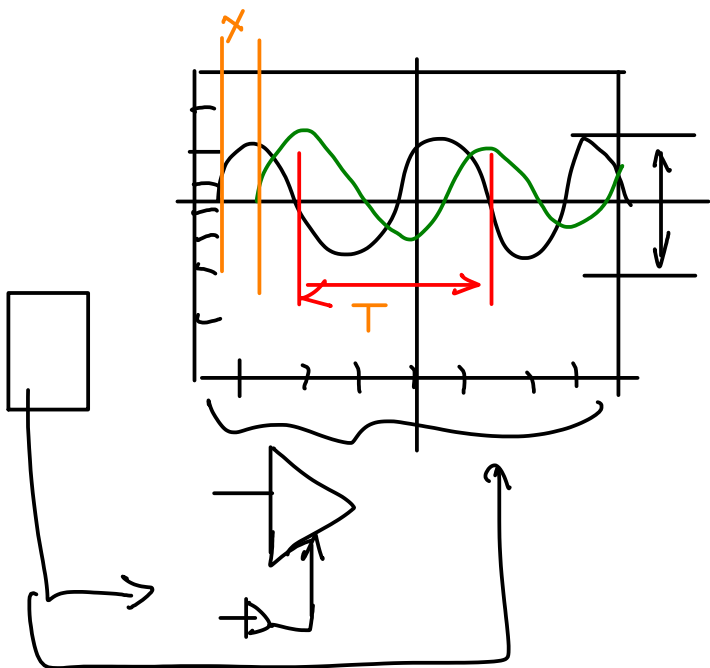


$$\begin{aligned}
 f_0 &= 100 \cdot k^0 \\
 f_1 &= 100 \cdot k^1 \\
 f_2 &= 100 \cdot k \cdot k \\
 f_3 &= 100 \cdot k \cdot k \cdot k \\
 f_n &= 100 \cdot k^n
 \end{aligned}$$

$$\begin{aligned}
 10^3 &= k^{30} \\
 \log 10^3 &= \log k^{30} \\
 3 \log 10 &= 30 \log k \\
 \log k &= \frac{3 \log 10}{30} \\
 &= \left( \frac{3}{30} \right)
 \end{aligned}$$

$$\begin{aligned}
 f_0 &= 100 \\
 f_{30} &= 100 \times 10^3 \\
 f_{30} &= 100 \cdot k^{30} =
 \end{aligned}$$

$$\begin{aligned}
 k &= 10 \\
 &= 10^{0.1}
 \end{aligned}$$



$$\frac{x}{T} \cdot 360$$

V scale  
 H scale