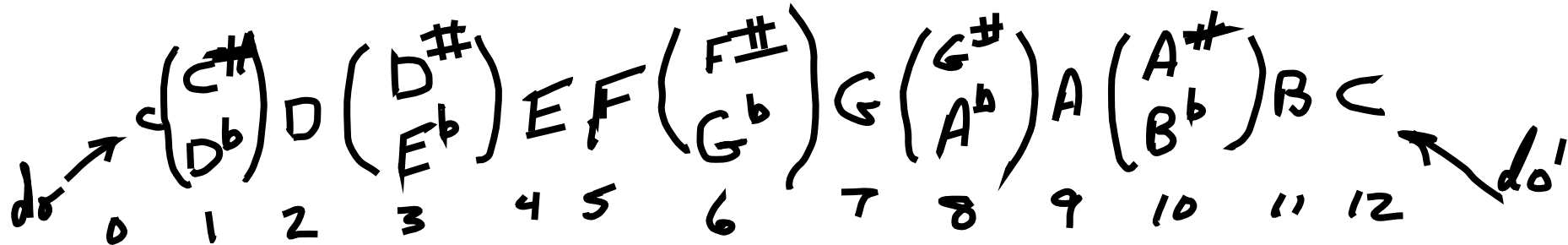


Test Power Point

Presentation



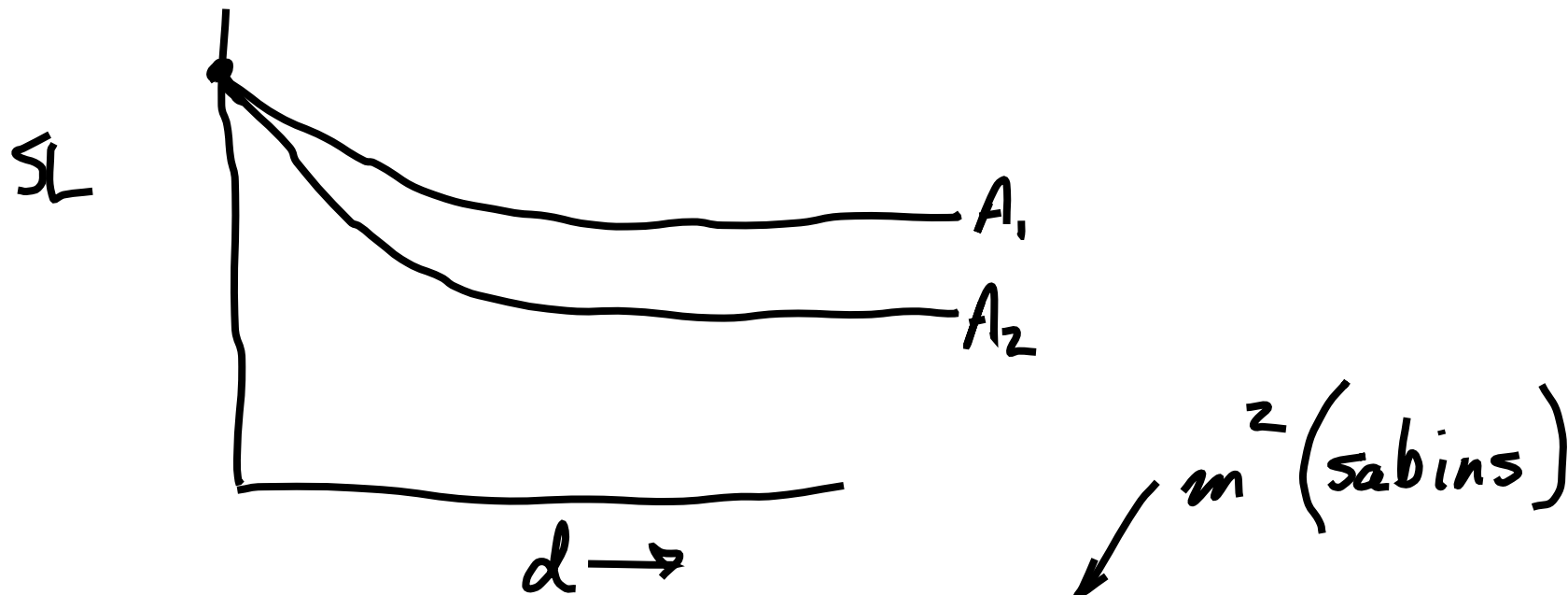
$$\frac{S_i}{S_{i-1}} = a$$

$$C a^3 = \begin{pmatrix} C^\# \\ D^b \end{pmatrix} a^2 = D a = \begin{pmatrix} D^\# \\ E^b \end{pmatrix}$$

Call do a freq f & $do' = 2f$

$$f a^{12} = 2f \quad a = \sqrt[12]{2}$$

$$a = 1.0594630$$

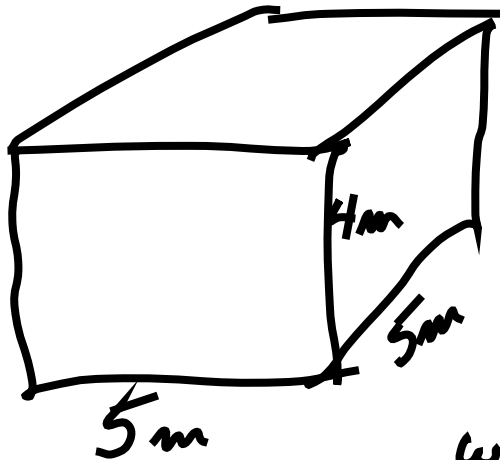


$a = \text{absorptivity} \propto S$

$a = \alpha S$
 $\hookrightarrow$ absorption coefficient

$A \equiv$ absorption (total)

$$A = \alpha_1 S_1 + \alpha_2 S_2 + \alpha_3 S_3 + \dots = \sum_{i=1}^N \alpha_i S_i$$



four walls each with area 20m^2

floor 25m^2

ceiling 25m^2

walls are painted concrete $\alpha_{\text{wall}} = 0.07$

floor marble $\alpha_f = 0.01$

ceiling plaster on lath $\alpha_c = 0.05$

$$A_i = 80\text{m}^2 \times 0.07 + 25\text{m}^2 \times 0.01 + 25\text{m}^2 \times 0.05$$

$$= 5.6 \text{ sabins} + 0.25 \text{ sabins} + 1.25 \text{ sabins}$$

$$A_i = 7.10 \text{ sabins}$$

floor carpet (indoor-outdoor) $\alpha_s = 0.20$
ceiling acoustical ~~tile~~ tile $\alpha_c = 0.99$ ln

$$A_2 = 25\text{m}^2 \times 0.20 + 25\text{m}^2 \times 0.99 + 80\text{m}^2 \times 0.07$$

$$A_2 = 5 \text{ sabins} + 24.75 \text{ sabins} + 5.6 \text{ sabins}$$

$$A_2 = 35.35 \text{ sabins}$$

$$A_1 = 7.10 \text{ sabins}$$

$$\begin{aligned} \text{NR} &= 10 \log \frac{A_2}{A_1} = 10 \log \frac{35.35}{7.10} \\ &= 10 \log (4.98) = 6.97 \text{ db} \\ &\quad \underline{1.677} \quad \text{or } 7 \text{ db} \end{aligned}$$

Singing in the shower

$$f_{xyz} = \frac{v}{2} \sqrt{\left(\frac{n_x}{l_x}\right)^2 + \left(\frac{n_y}{l_y}\right)^2 + \left(\frac{n_z}{l_z}\right)^2}$$

$$\lambda = \frac{2l}{n}$$

$$\underline{f} = \frac{v n}{2l} = \frac{v}{2} \left(\frac{n}{l} \right)$$

$$v = 345 \text{ m/s}$$