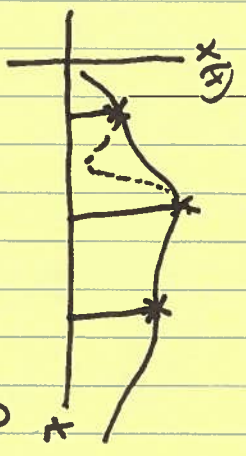


Lecture 22

Undersampling & A/D conversion



Sampling Theorem: signal does not change much between samples

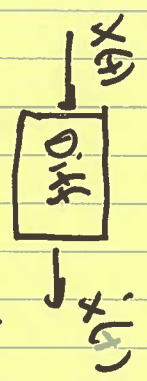
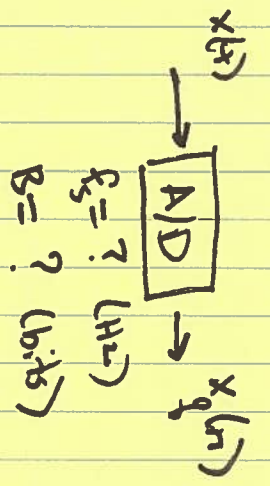
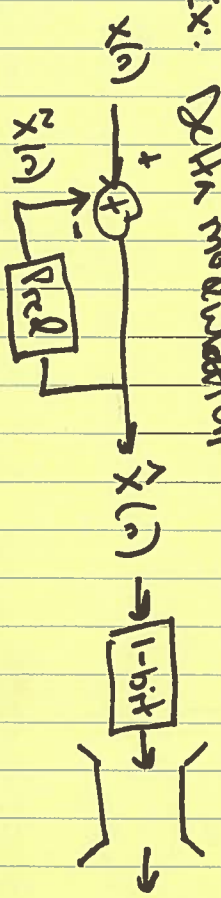


Pulse code modulation (PCM): use N bits to represent each sample.

Why is this inefficient?

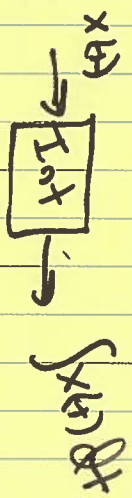
Solution: Differential sampling

Ex: Delta modulation



$H(f) = \frac{1}{2} \text{sinc}(\pi f T)$

$H(f) = 1$



$|H(f)| = \frac{1}{2}$

$H(f) = \frac{1}{2\pi f T}$

