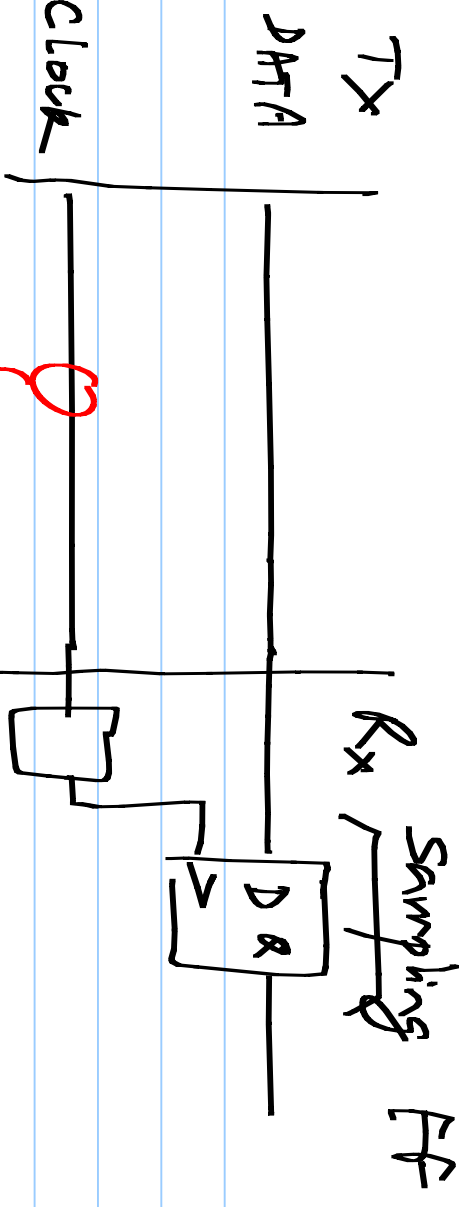
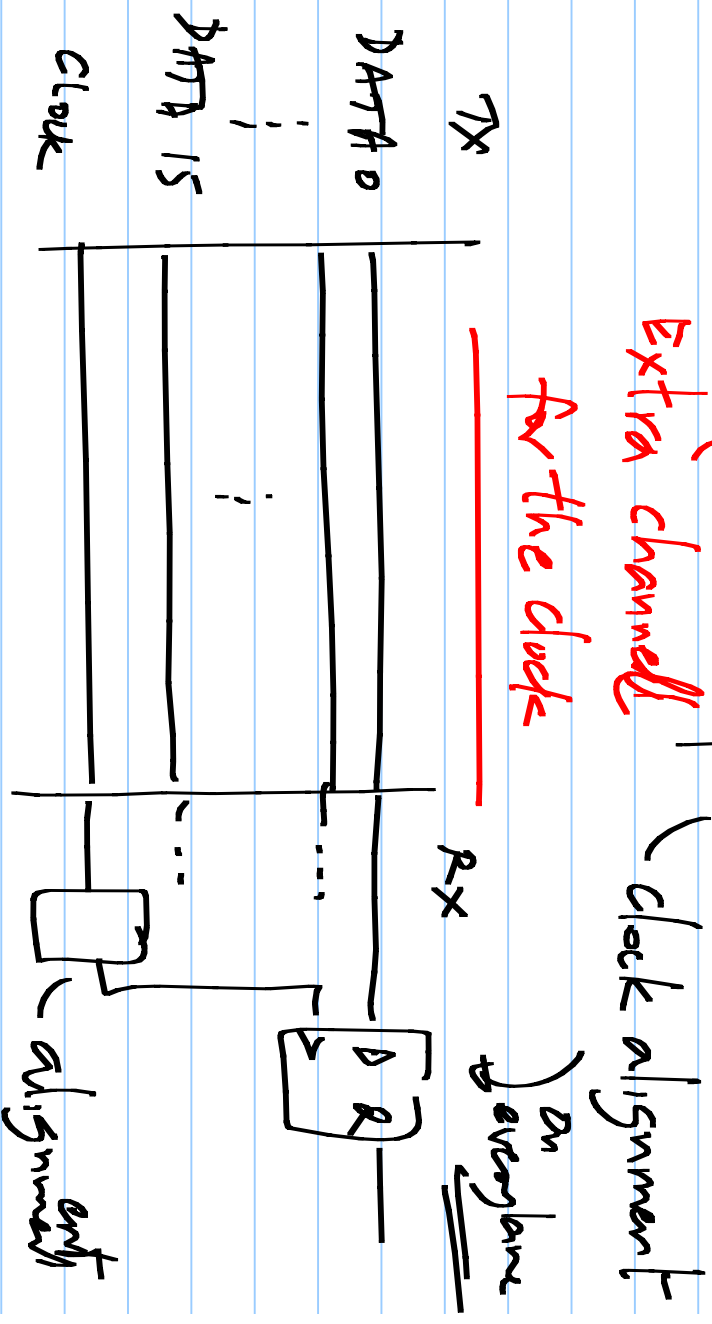


Lecture 3

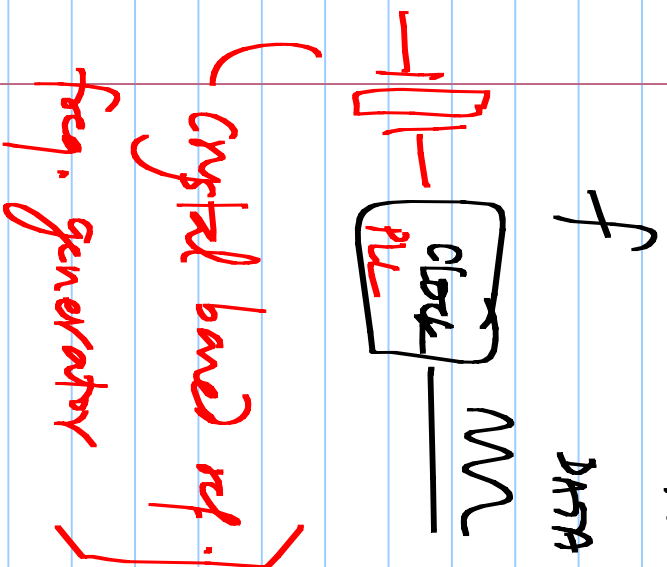
With clock forwarding



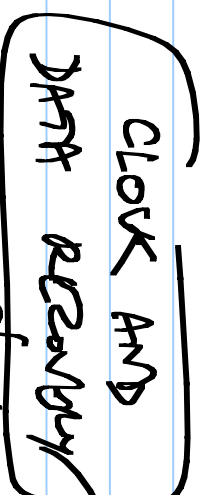
Extra channel
for the clock



Without clock forwarding



[crystal based ref. freq. generator]

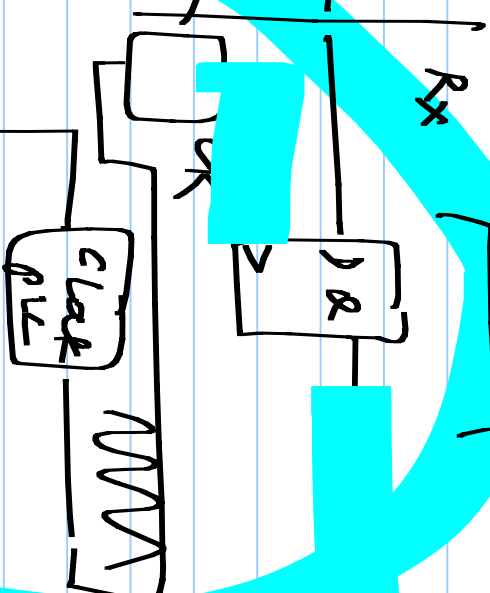


clocking circuitry

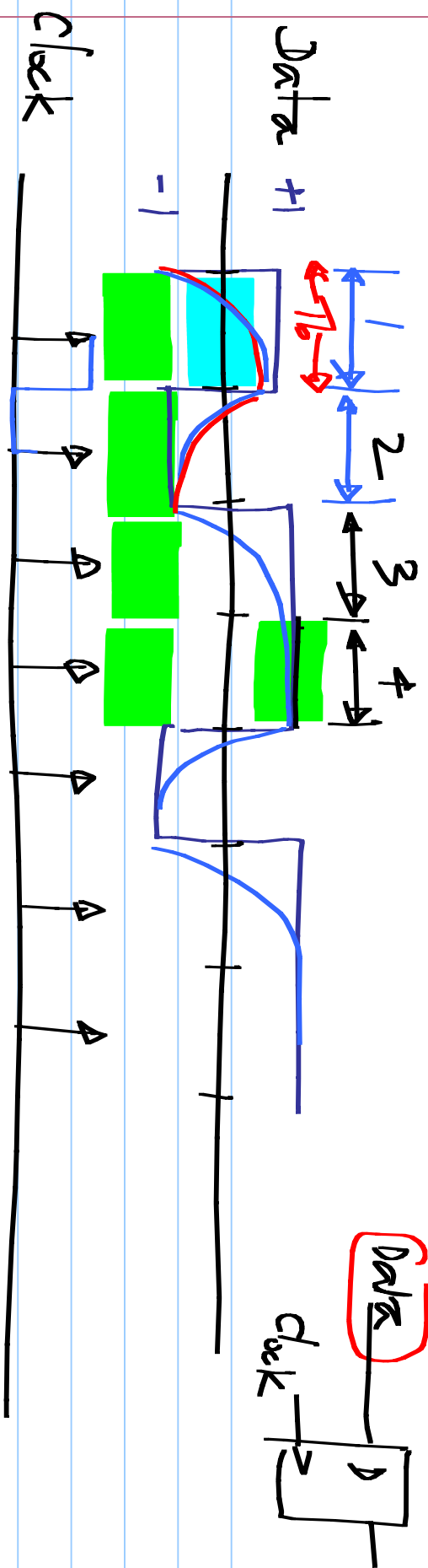
correct freq. &

phase for the received data.

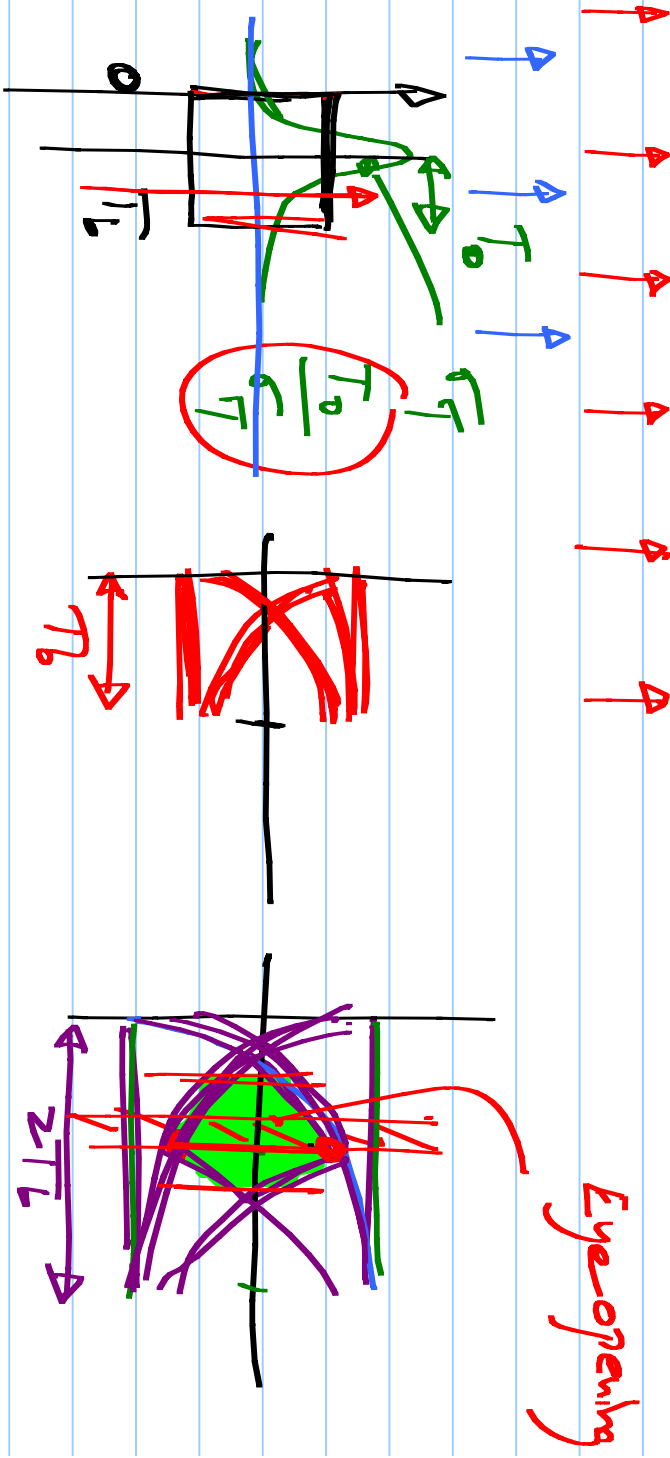
Sampling F/F

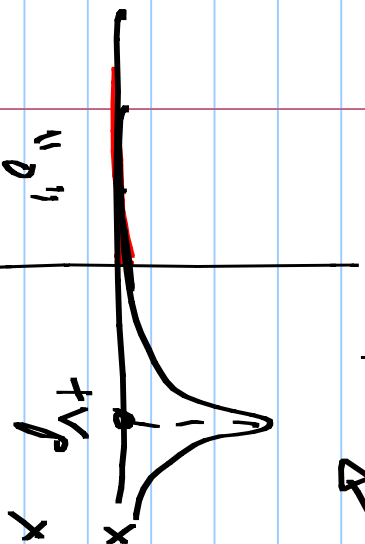
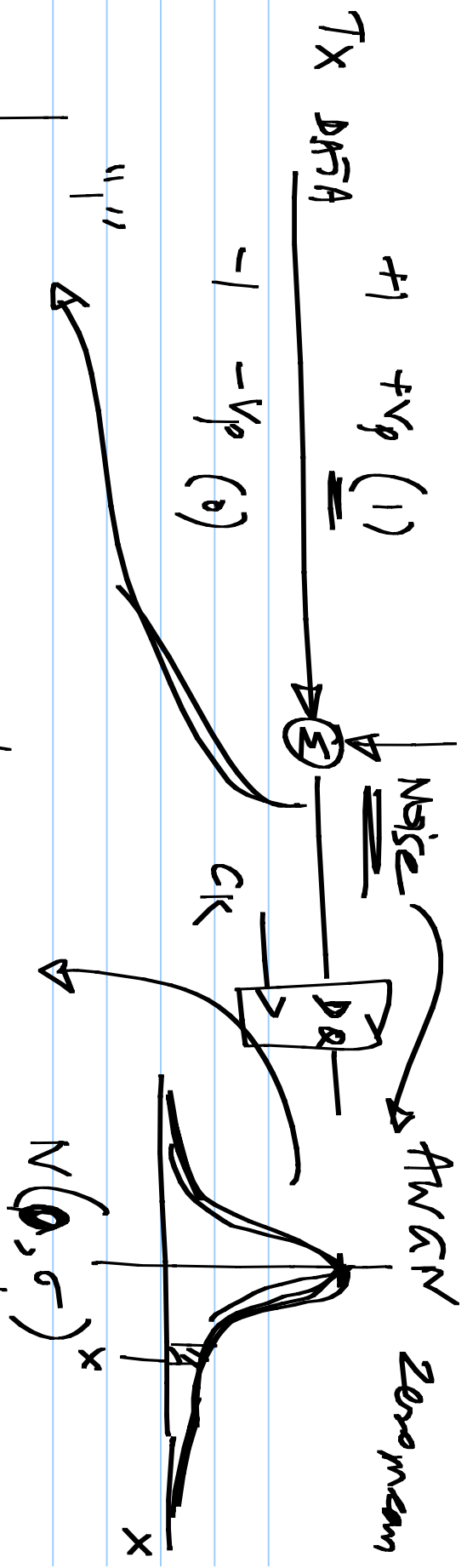


crystal based osc.



Eye diagram





$$p(x) = \frac{1}{\sqrt{2\pi}\sigma} \exp\left(-\frac{x^2}{2\sigma^2}\right)$$

std. deviation
rms value

Probability of noise being between $x - \frac{\Delta x}{2}$ and $x + \frac{\Delta x}{2}$ is $P_X(x) \cdot \Delta x$

BER Bit error ratio.

Signal amplitude @ sampling instant

$$\text{BER} = \text{erfc} \left(\frac{V_p}{\sigma} \right)$$

$$\frac{V_p}{\sigma} =$$

10^{-9} Noise at the
sampling instant

