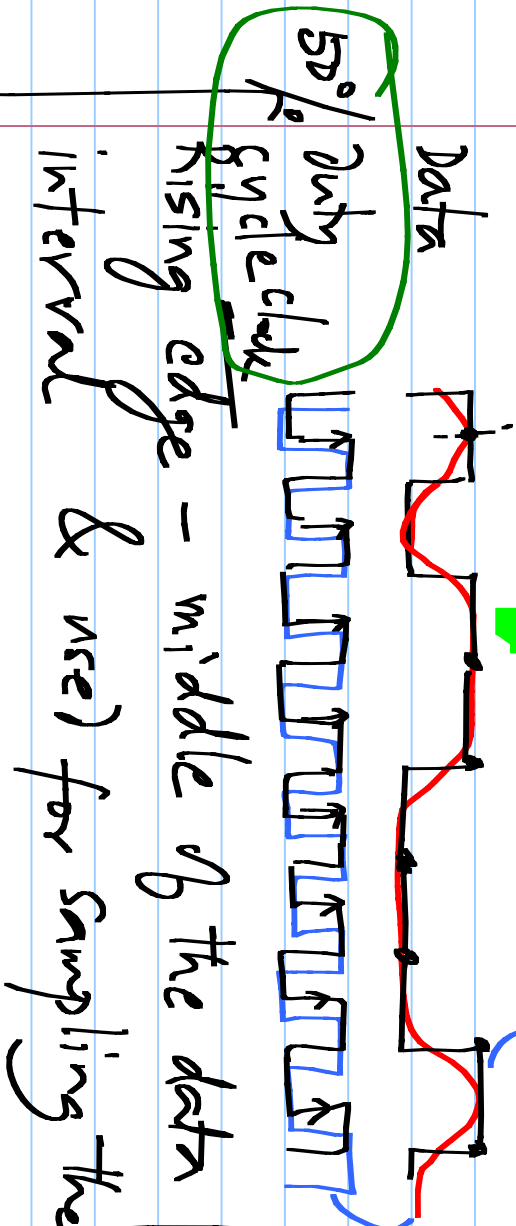
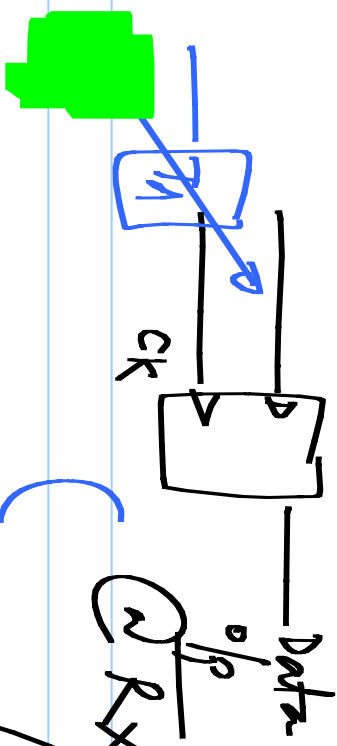
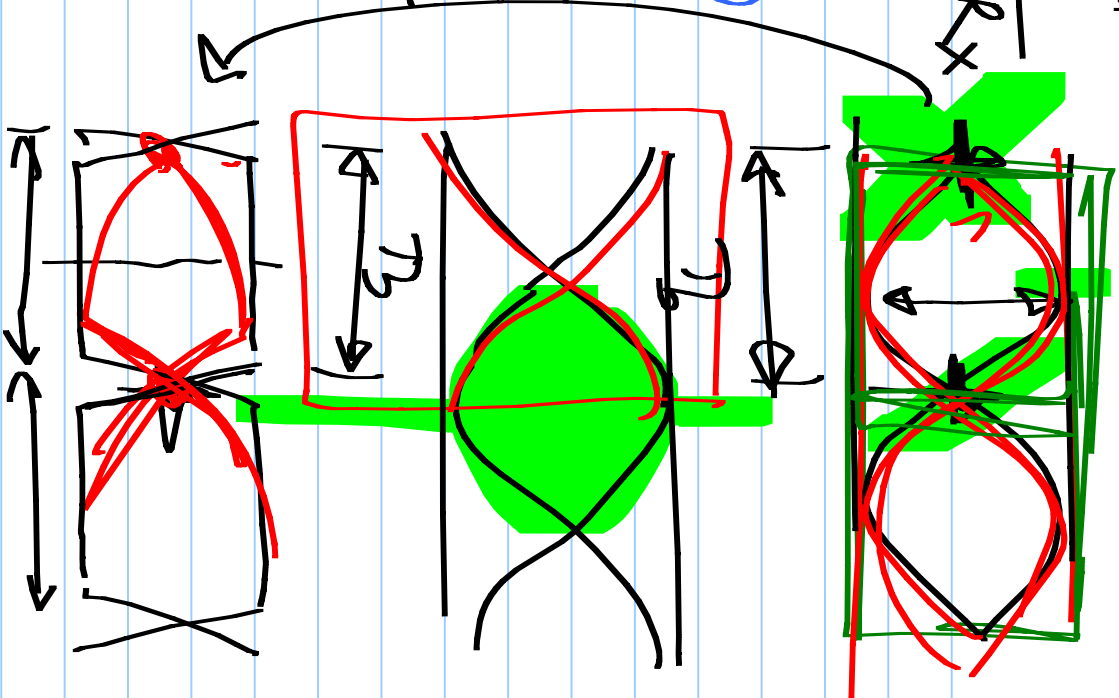
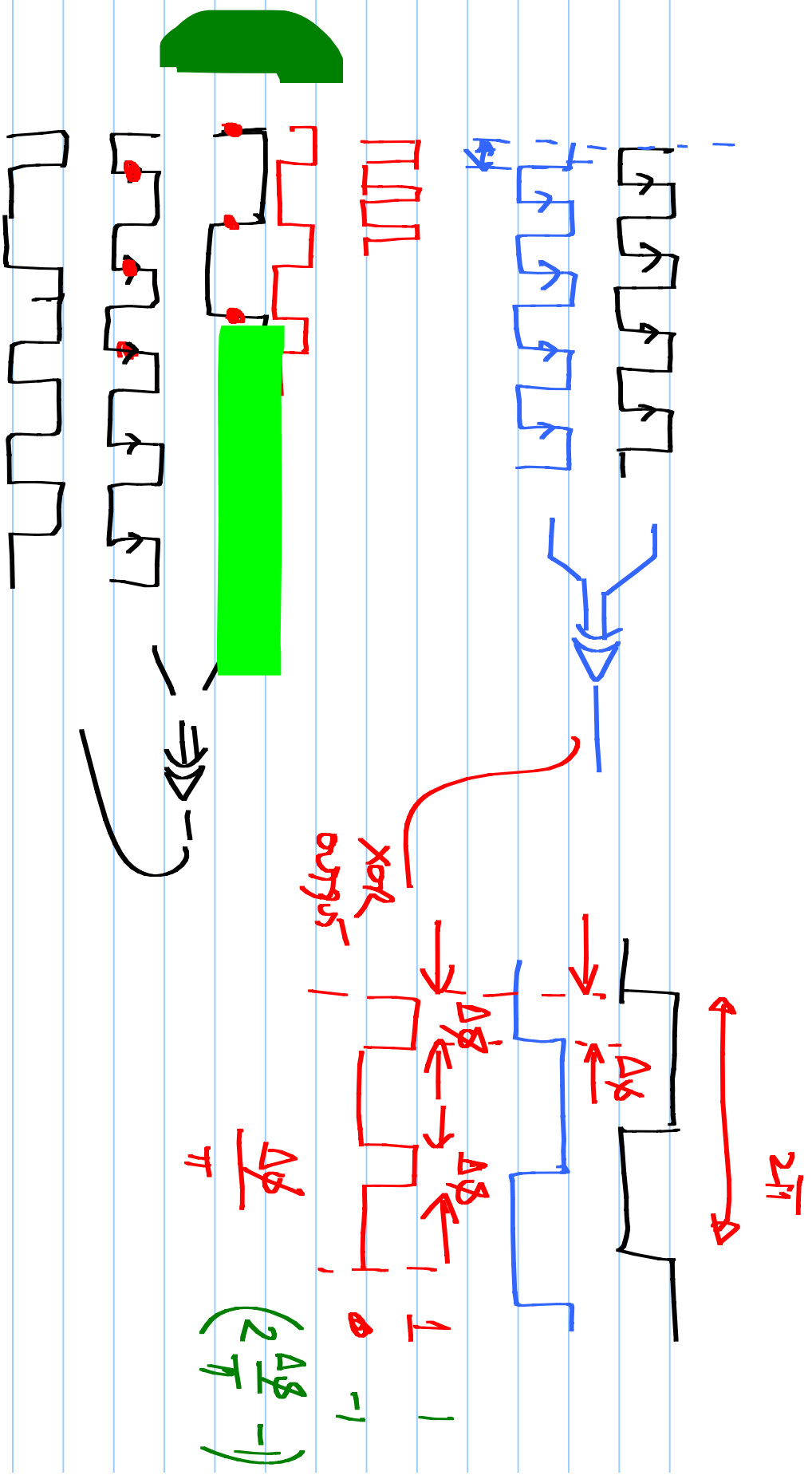


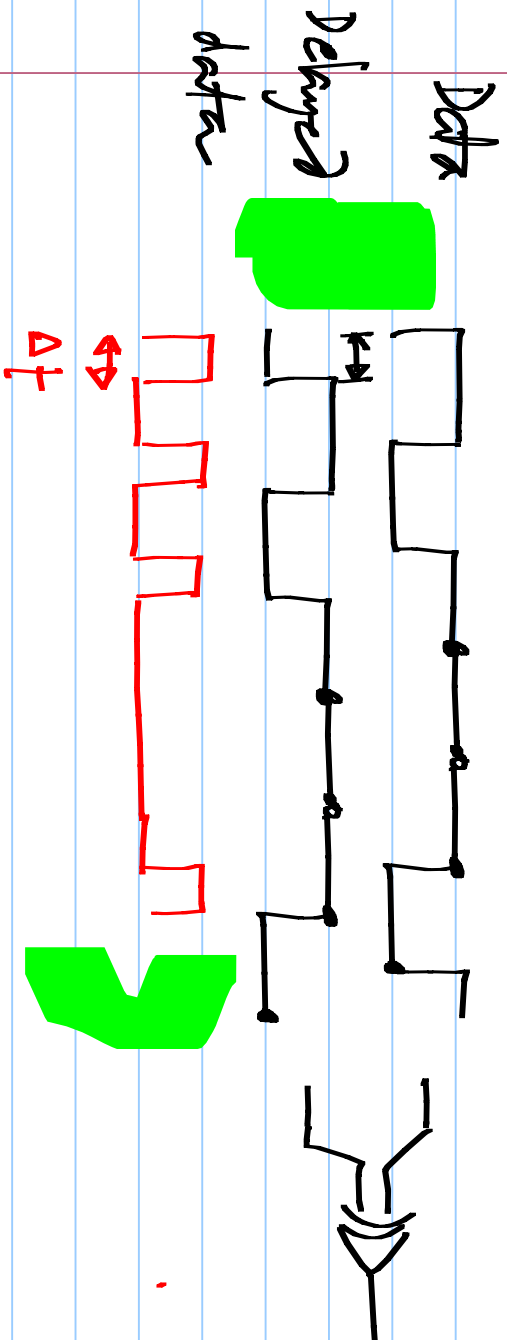
Lecture 4



Falling edge: coincident with data transition



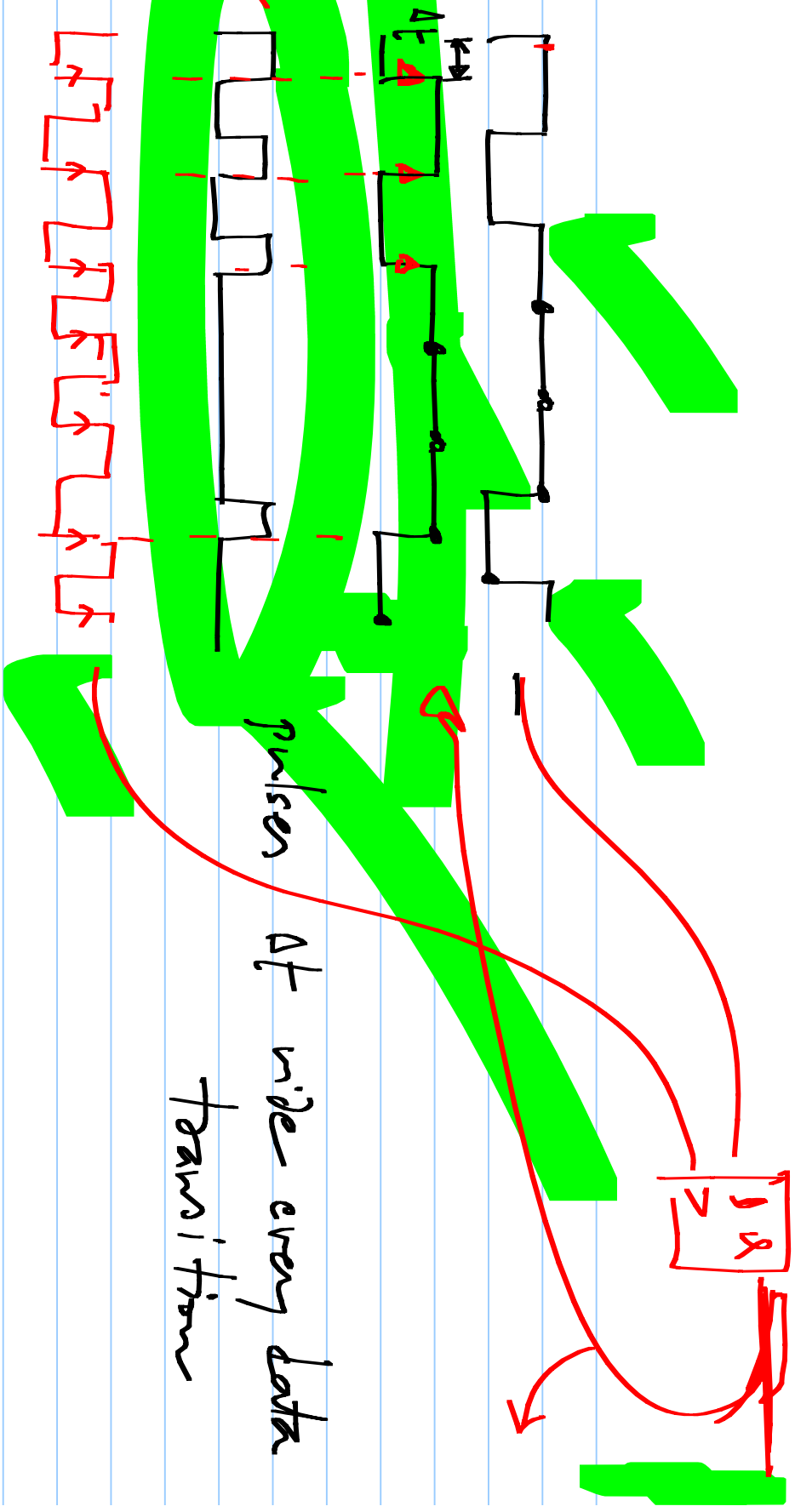




data

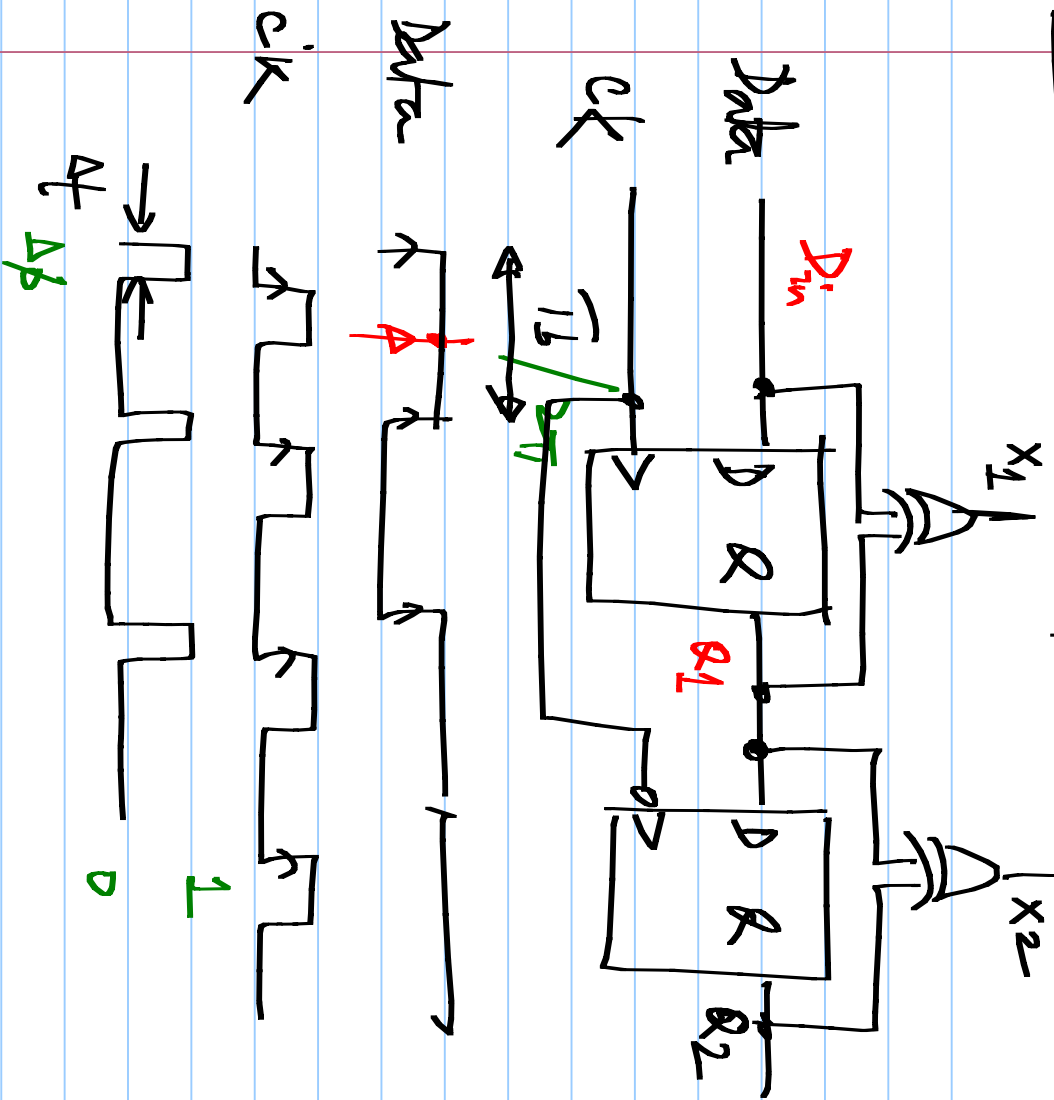
Delayed
Data

X5R
2/1



Phase detector for random data

Phase diff. between data transition & rising edge of the clock



avg value of X_1 in the interval

containing $\Delta\phi$ transition 2π

π

