Causal system definition

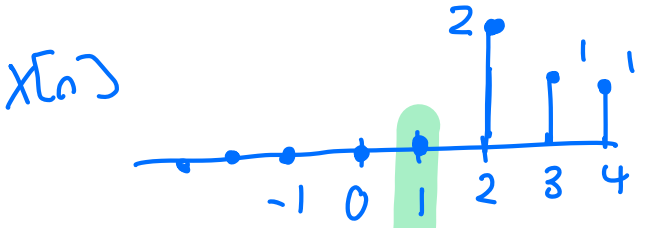
output $y[n]$ does not depend on future input $x[n]$

ex $y[3]$ can not depend on $x[4]$

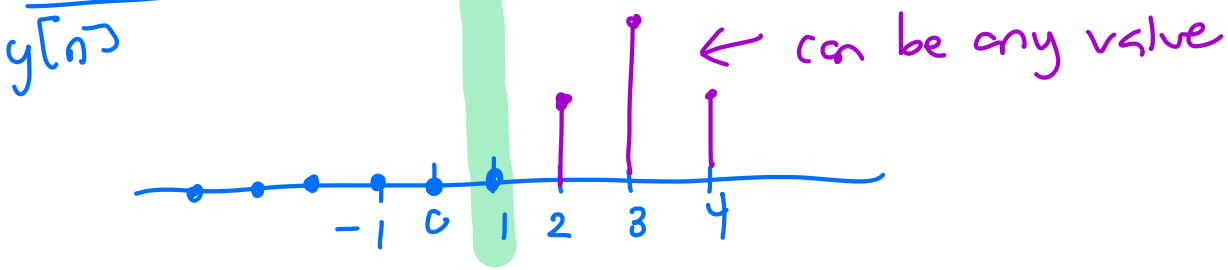
$y[-2]$ can not depend on $x[-1]$

Definition in book is slightly different

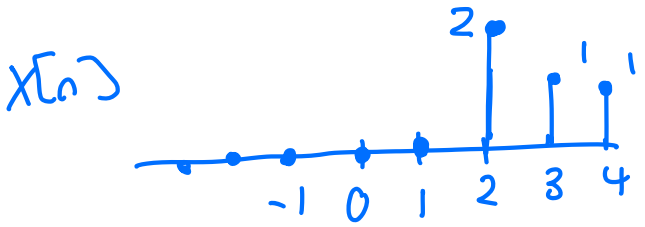
A system is causal if $x[n]=0$, for $n \le n_0$ ($x[n]$ is a right-sided sequence) results in an output $y[n]=0$, for $n \le n_0$ ($y[n]$ is also a right-sided sequence



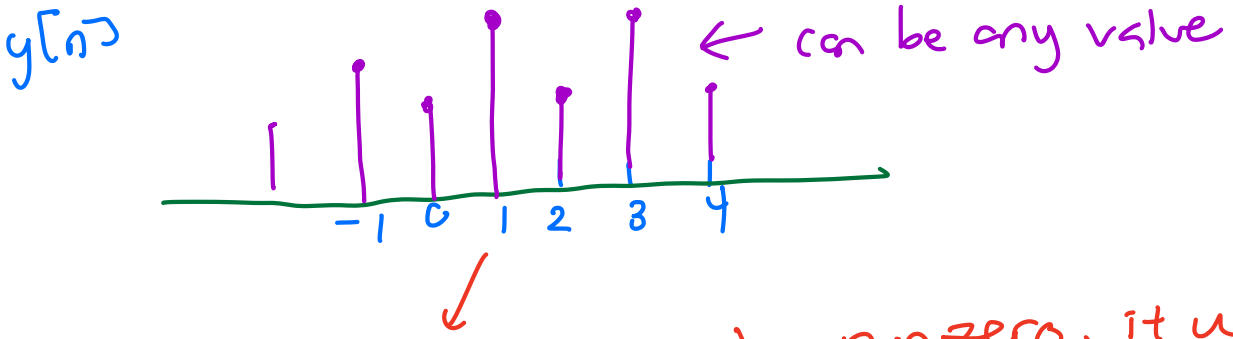
if the system is causal



$n_0 = 1$ in this case



if the system is not causal



For y[1] to be nonzero, it would need to depend on nonzero x[n] values such as y[2], y[3]