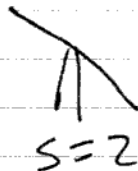
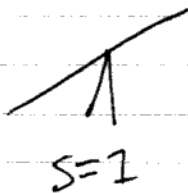
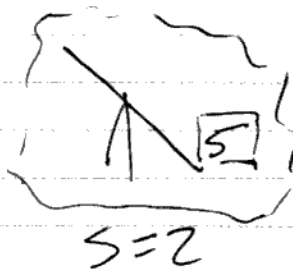
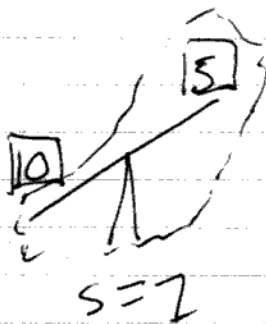


① outside state / inside state

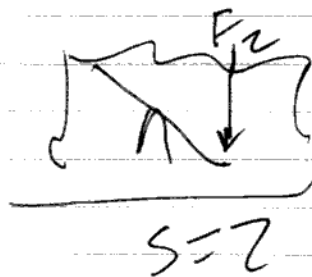
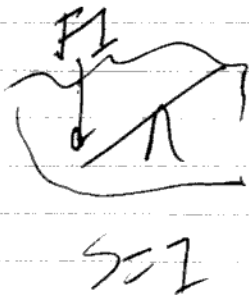


② one state variable true values



③ $S=1$ if $\boxed{10}$
 $S=2$ if $\boxed{5}$

continuous



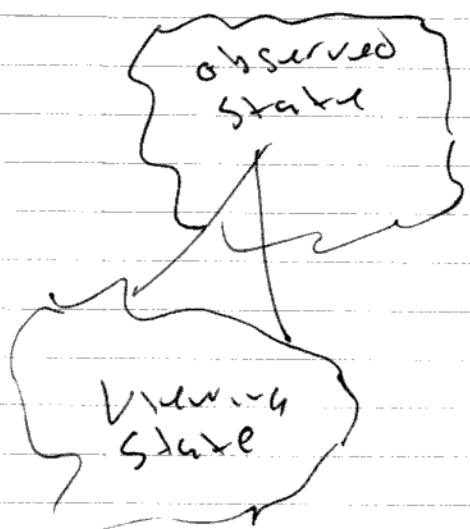
④ Impulse causes state flip
 Think light switch

Snowflake / leave

⑤ Like 4 but complicated to reverse



⑥ Dependency makes powerful lock



⑦ Viewing

① Provides inputs that change observed machines while viewed
re # 3

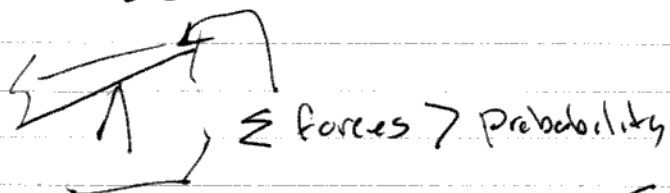
② Provides inputs that flip state after viewed
re # 4

$\Leftarrow \Rightarrow \text{AND} \Rightarrow X \cdot Y$

OR $\Rightarrow X + Y$

⑧

Light switch / impulse



⑨ its a lock

won't be easily / randomly changed

Foundation of persistent structure in universe