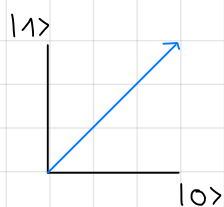


2 a)



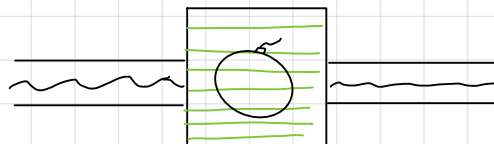
$$\frac{1}{\sqrt{2}}|0\rangle + \frac{1}{\sqrt{2}}|1\rangle$$



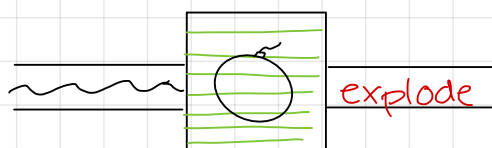
$\mathcal{M}$  - vertical  
 $\sim$  - horizontal  
 $\sim$  -  $\frac{1}{\sqrt{2}}|0\rangle + \frac{1}{\sqrt{2}}|1\rangle$

c)

compress to  $|0\rangle$   
 50% chance



compress to  $|1\rangle$   
 50% chance

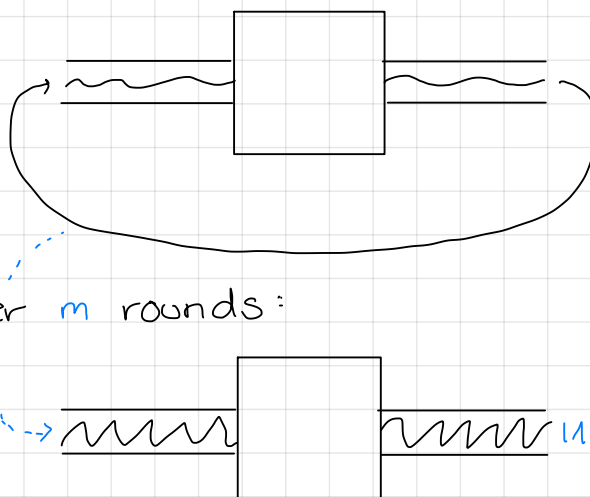


3 a)



$$m \cdot \alpha = 90$$

after  $m$  rounds:



c)

