

# Take-Home Exam 2

Prob 1)  $n=16$   $m=12$  TC

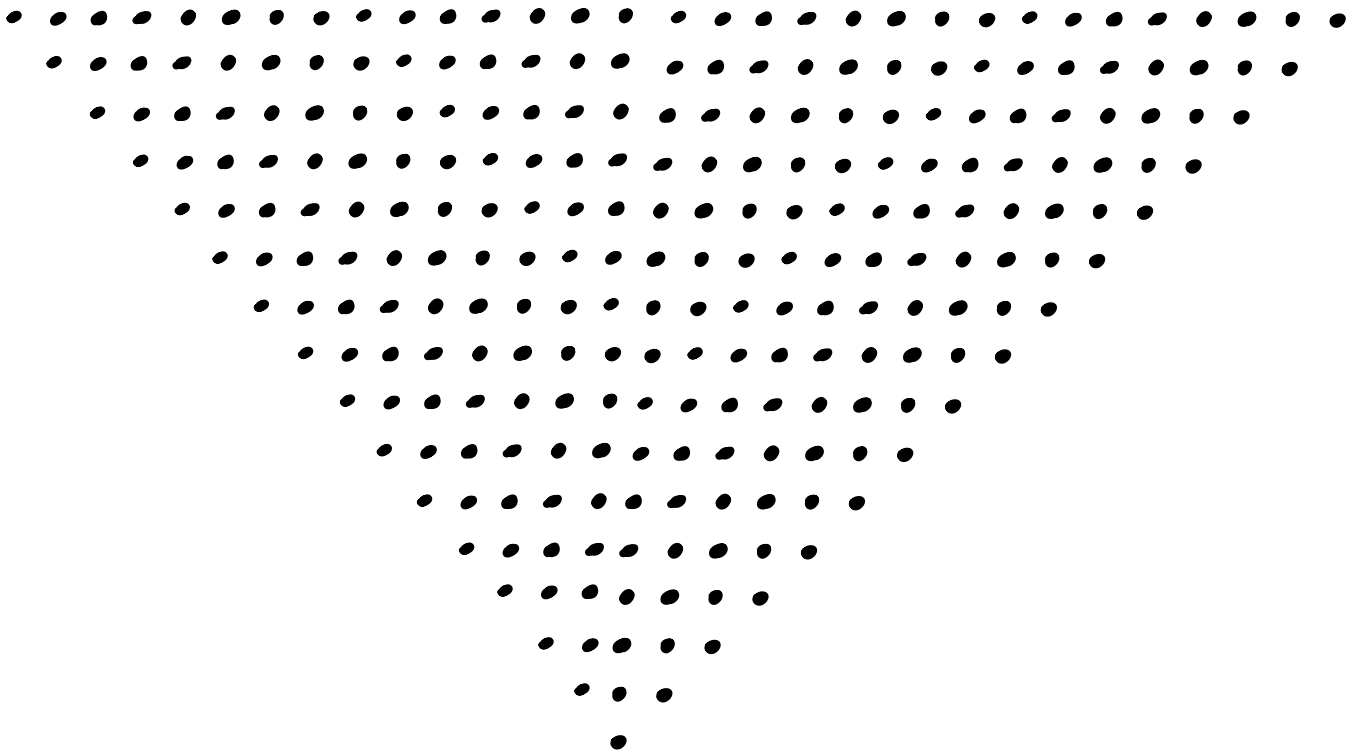
$$\left( -x_{15} 2^{15} + \sum_{i=0}^{14} x_i 2^i \right) \left( -y_{11} 2^{11} + \sum_{j=0}^{10} y_j 2^j \right)$$

$$= x_{15} y_{11} 2^{26} + \sum_{i=0}^{14} \sum_{j=0}^{10} x_i y_j 2^{i+j} + \sum_{i=0}^{14} x_i y_{11} 2^{i+11} + \sum_{j=0}^{10} x_{15} y_j 2^{j+15} + (2^{15} + 2^{11}) + (2^{15+11})$$

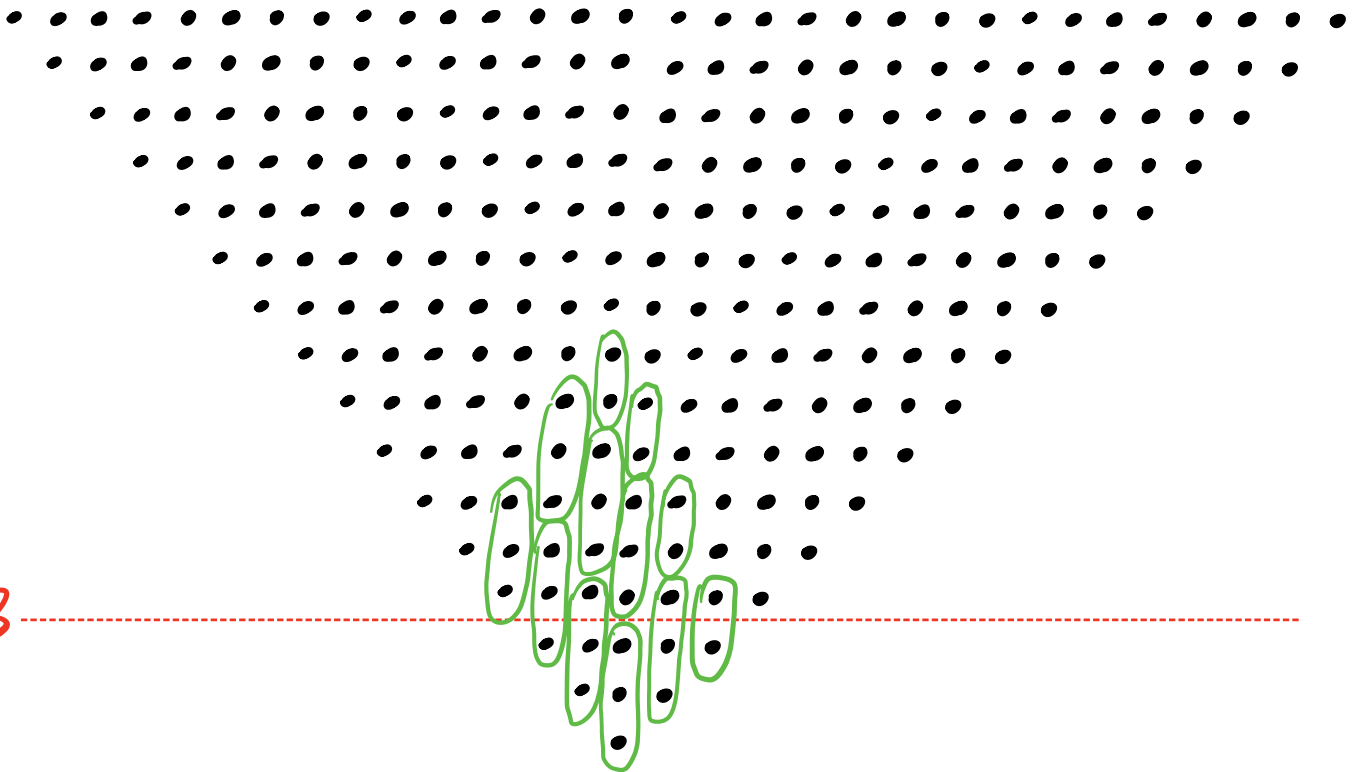
Convert HAs to  
FA with  $c_{in}=1$

Prob 2)





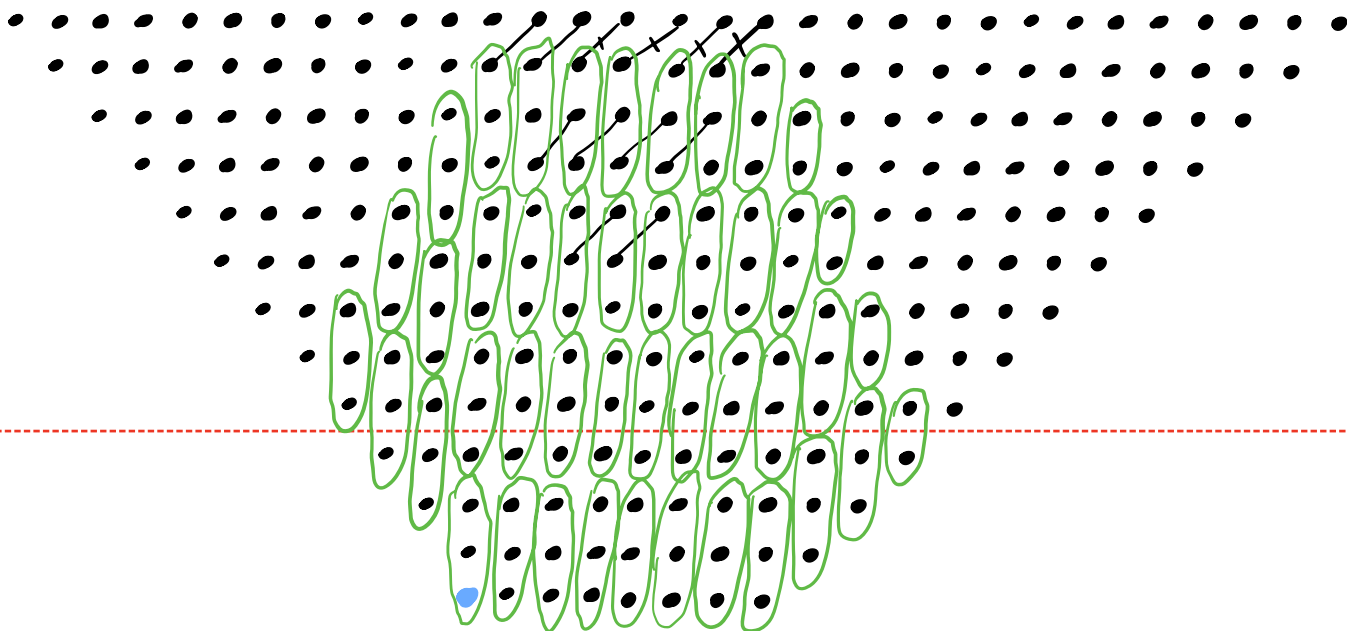
$$d_6 = 13$$



13

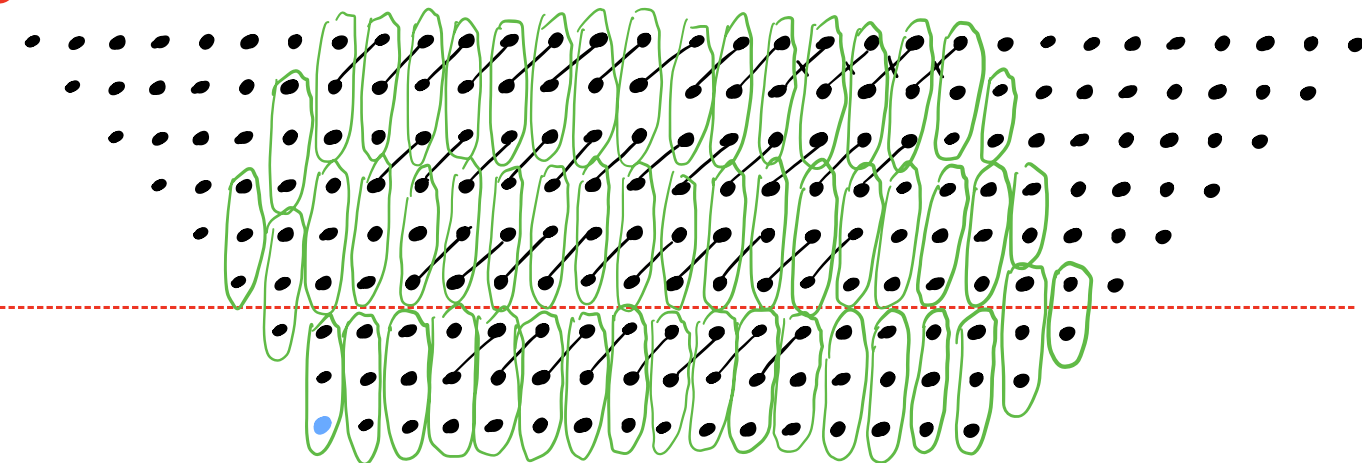
$$d_5 = 9$$

9



$$d_4 = 6$$

6



$$d_3 = 4$$

4

