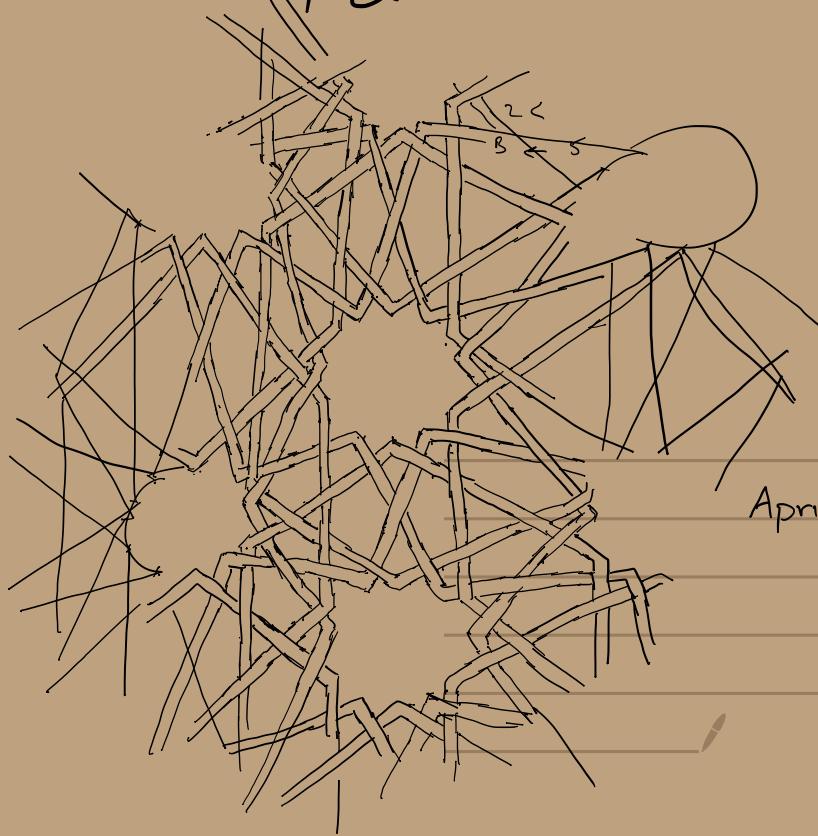
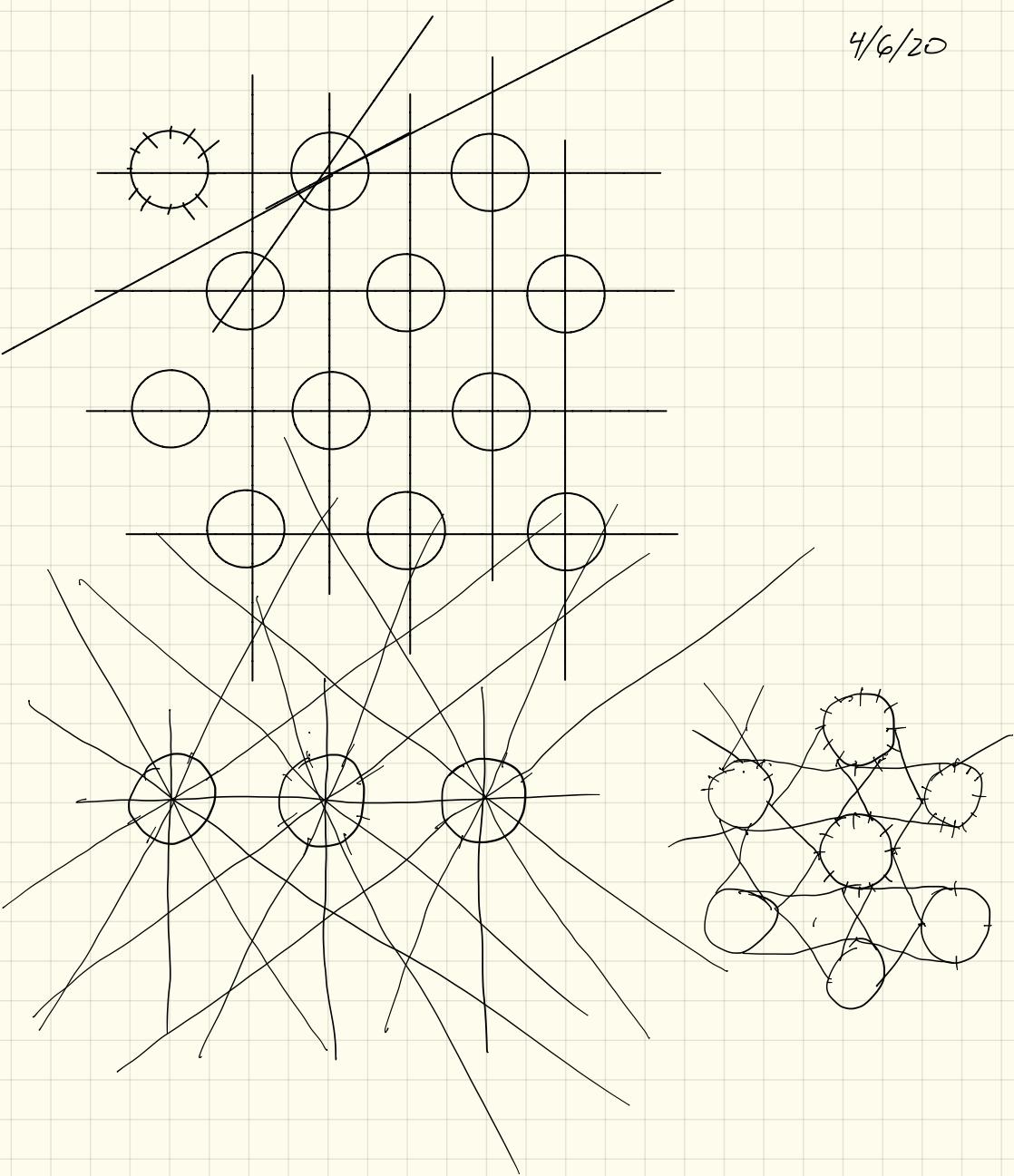


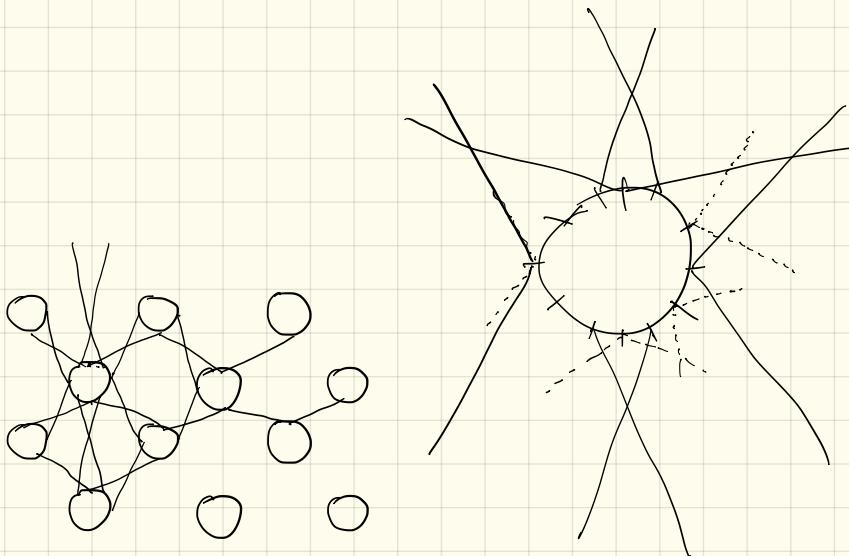
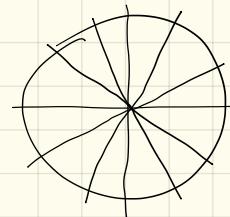
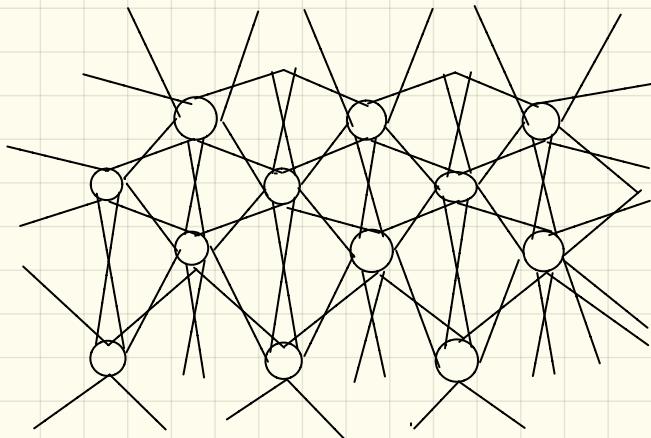
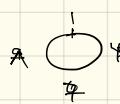
# Islamic Geometric

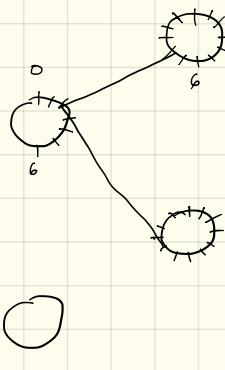
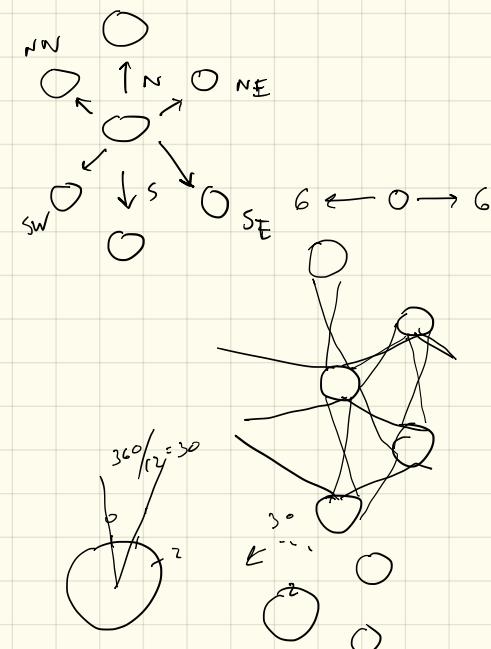
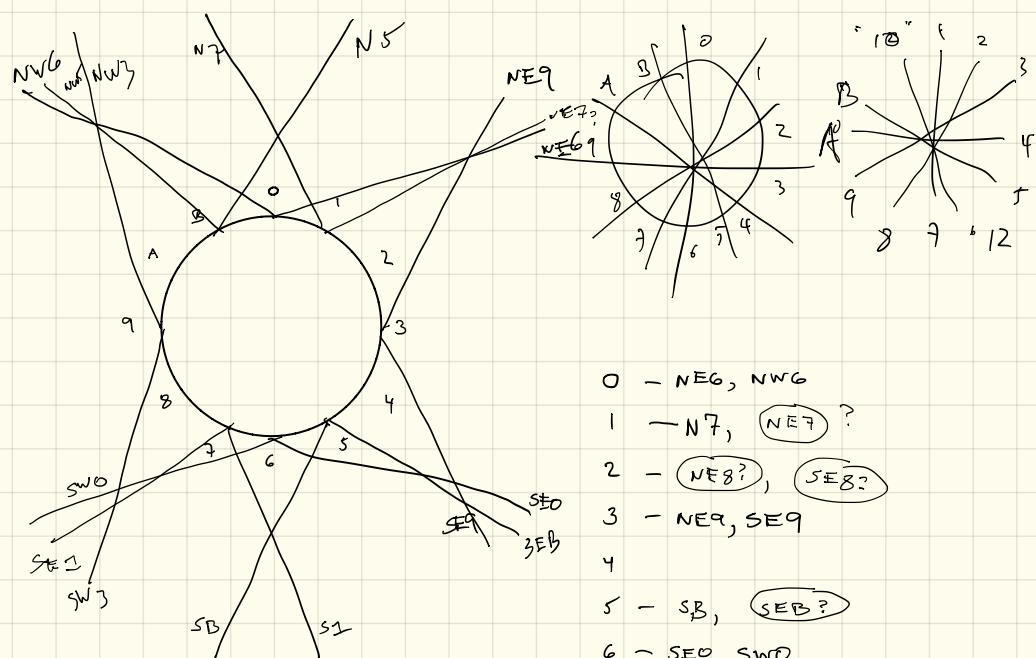
## Patterns



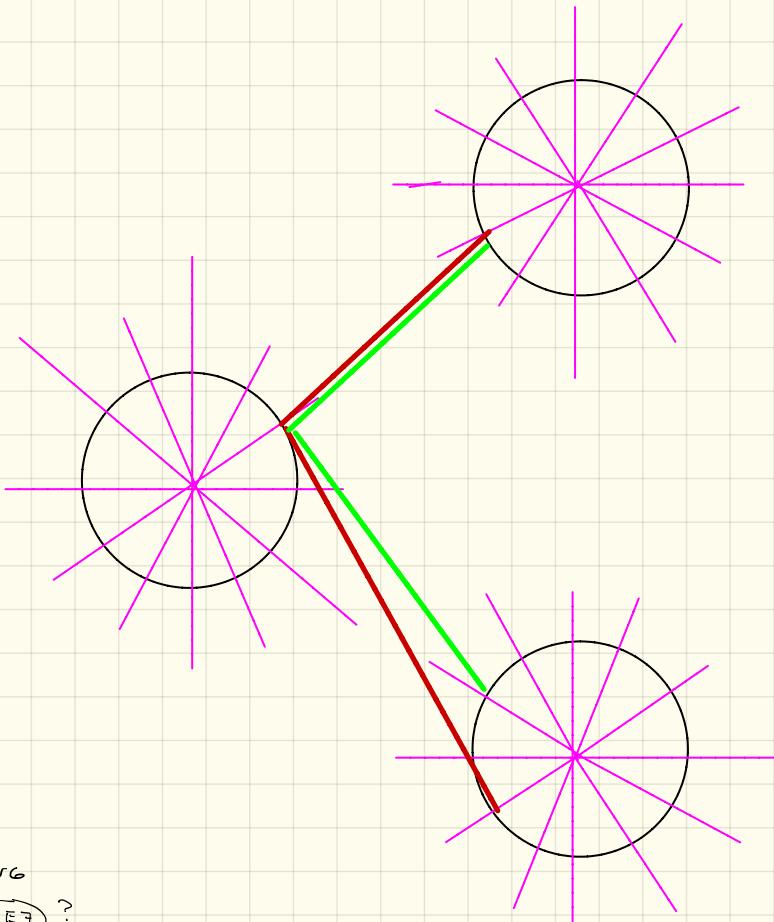
4/6/20







2, 4, 8, A



0 - NEG, NWG

1 - N7, (NEG) ?

2 - (NEG?) , (SEG?) or (SE10?) asymmetric!

3 - NEG, SEG

4

5 - SB, (SEG?)

6 - SEO, SWO

7 - S1 , (SE1?)

8

9 - NW3, SW3

A

B - NS, (NW5) ?

0 - G

1 - 7

2 — 8?

3 - 9

4 -

5 - B

✓ 6 - O

7 - I

NE, NW

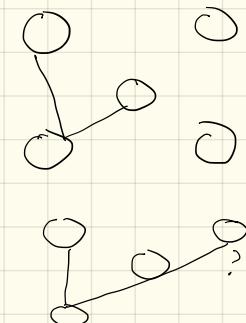
N, NE

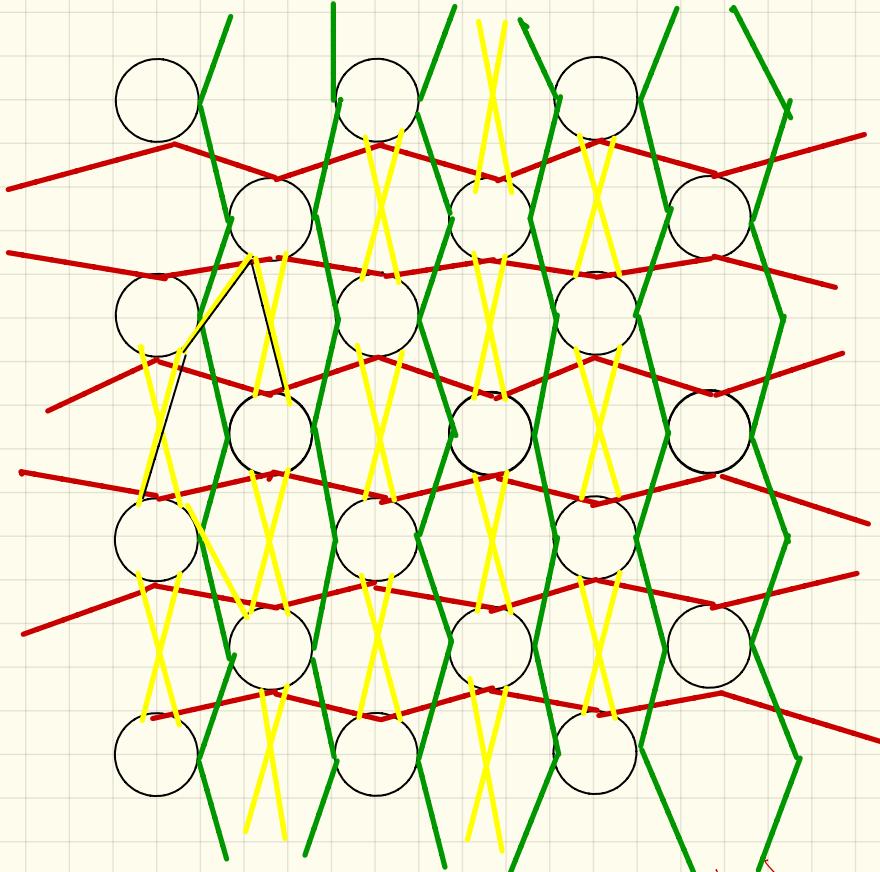
NE, SE

NE, SE

S, SE

SE, SW





0 - NEG, NWG

1 - N7, N7? ?

2 - (N8?), SE8? or SE10? asymmetric?

3 - ~~NEG~~ SE9 A

8

5 - SB, NW7

6 - SEO, SWO

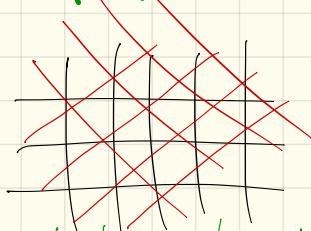
7 - S1, SE1?

4

9 - NW3, SW3

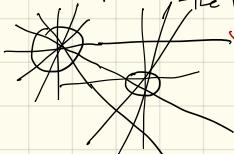
3

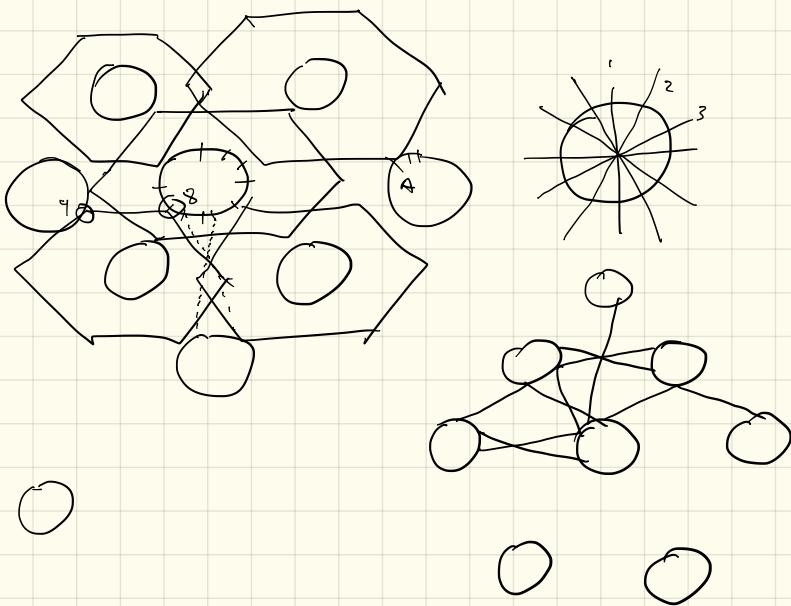
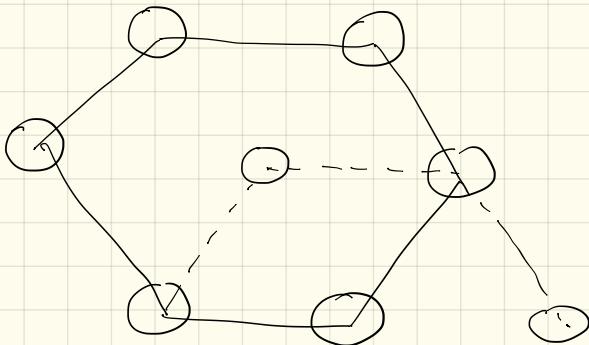
B - NS, NWS?

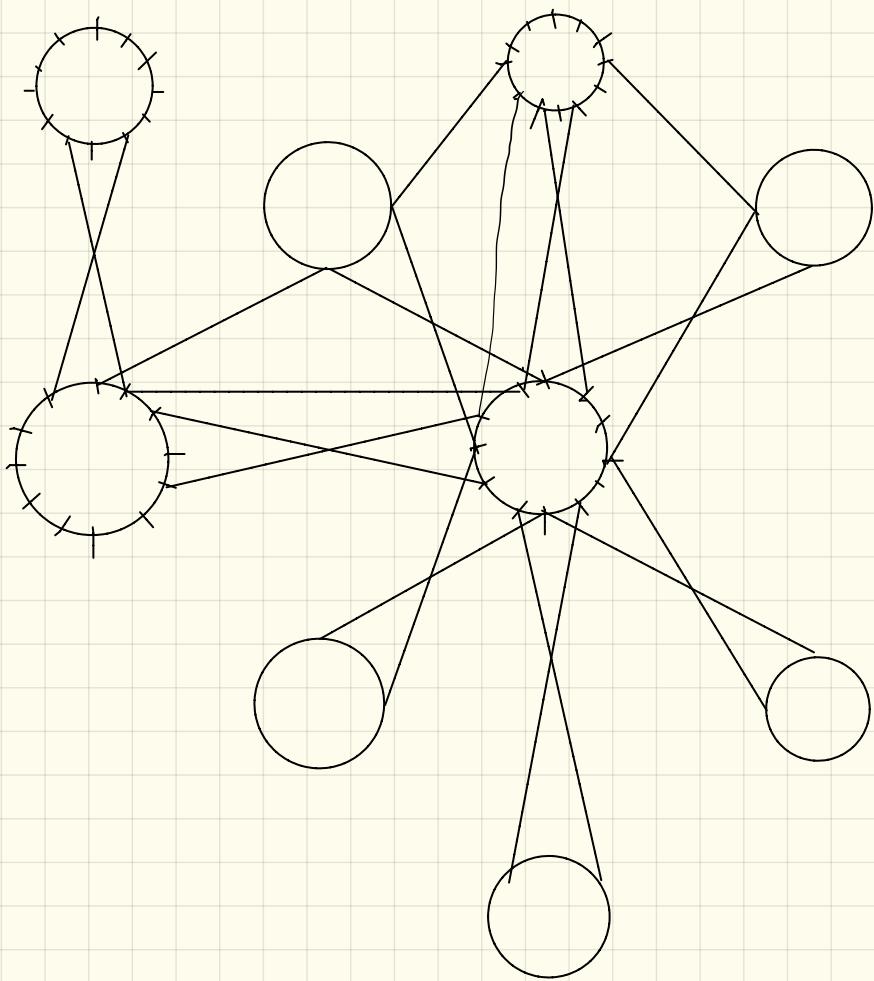


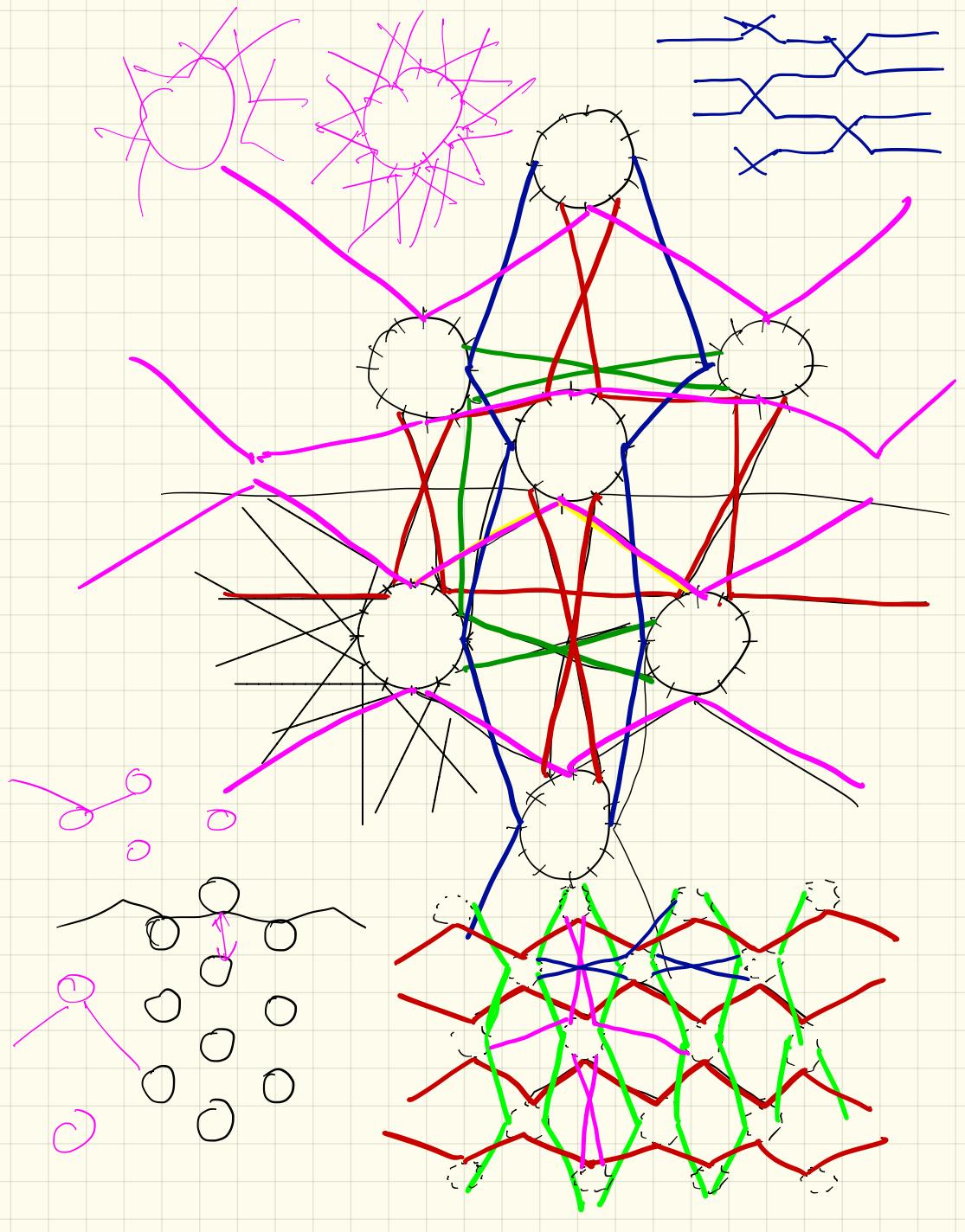
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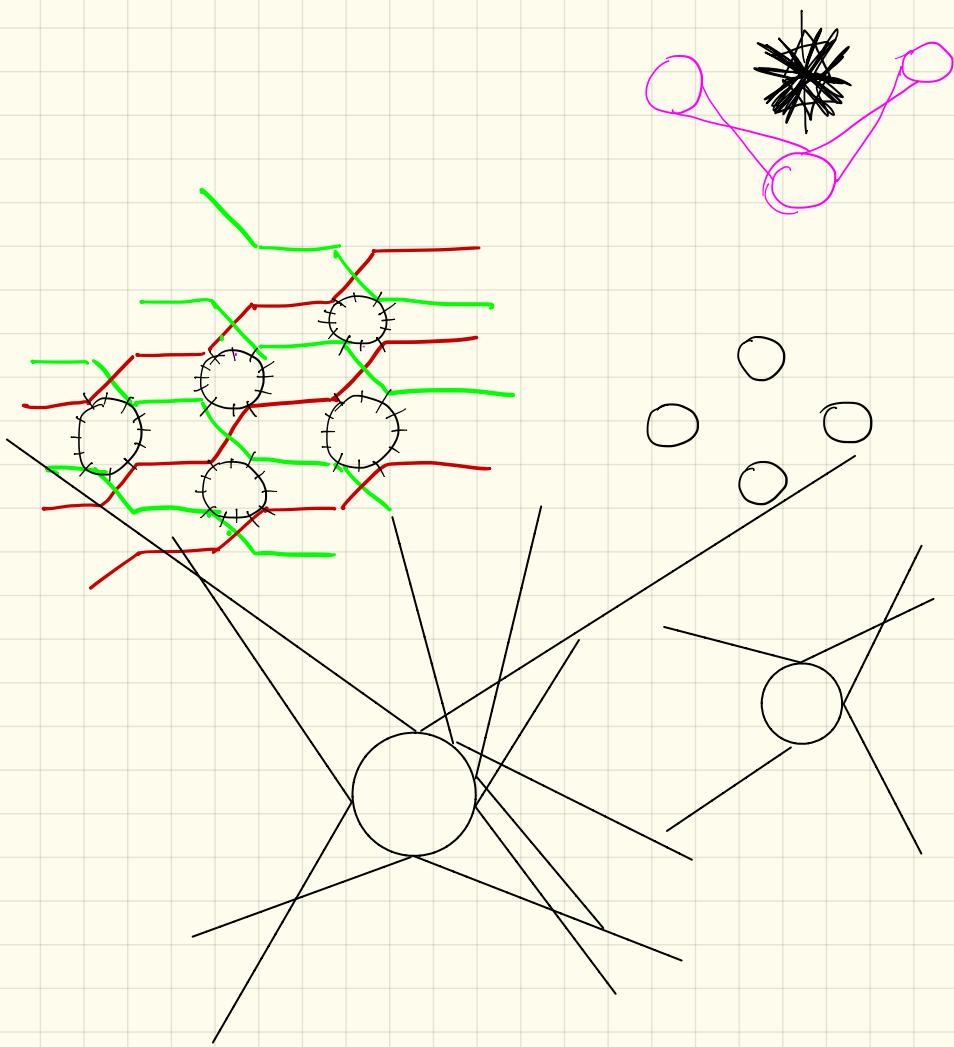
of course:  
the circles  
are offset to  
the 12-fold  
symmetry

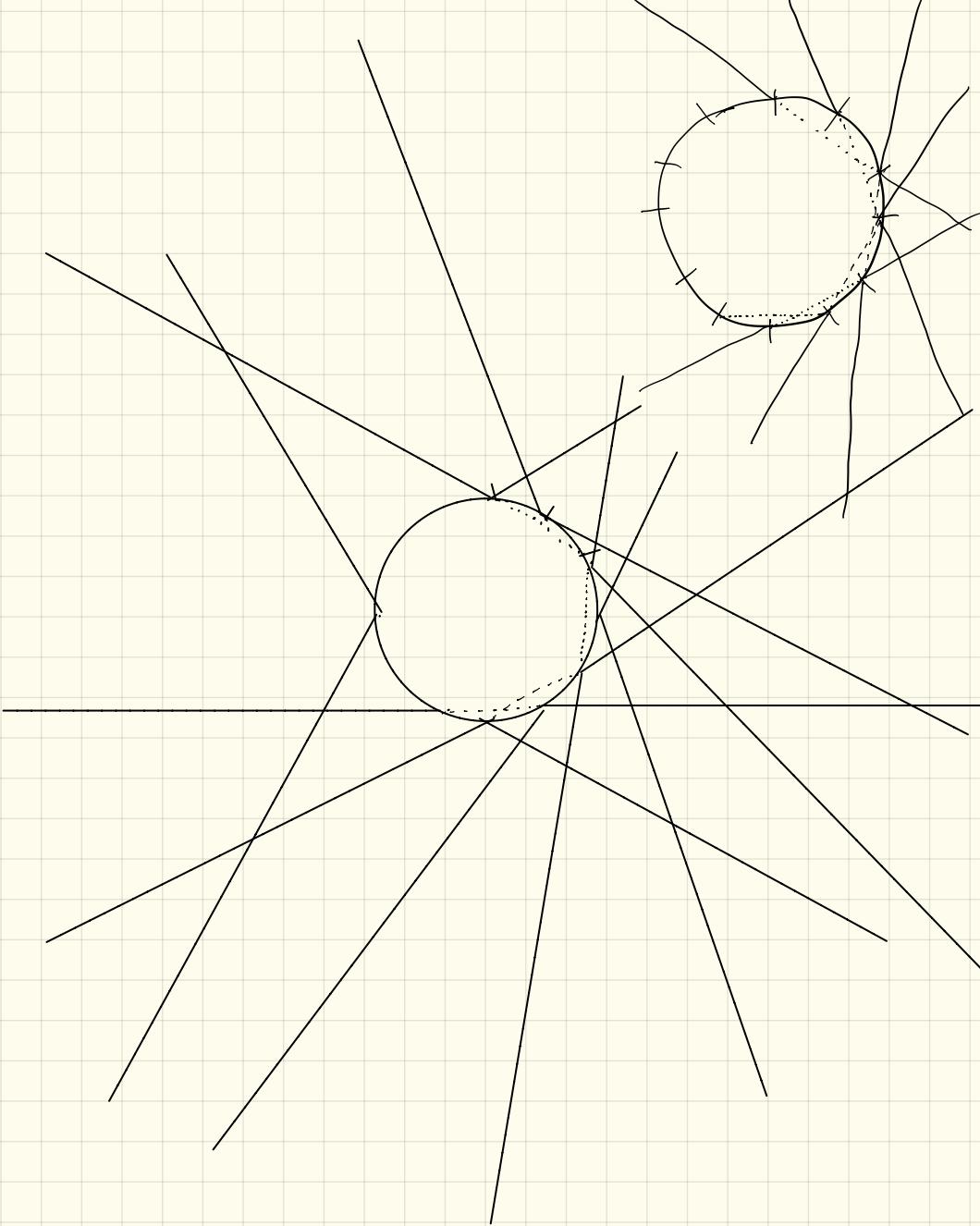


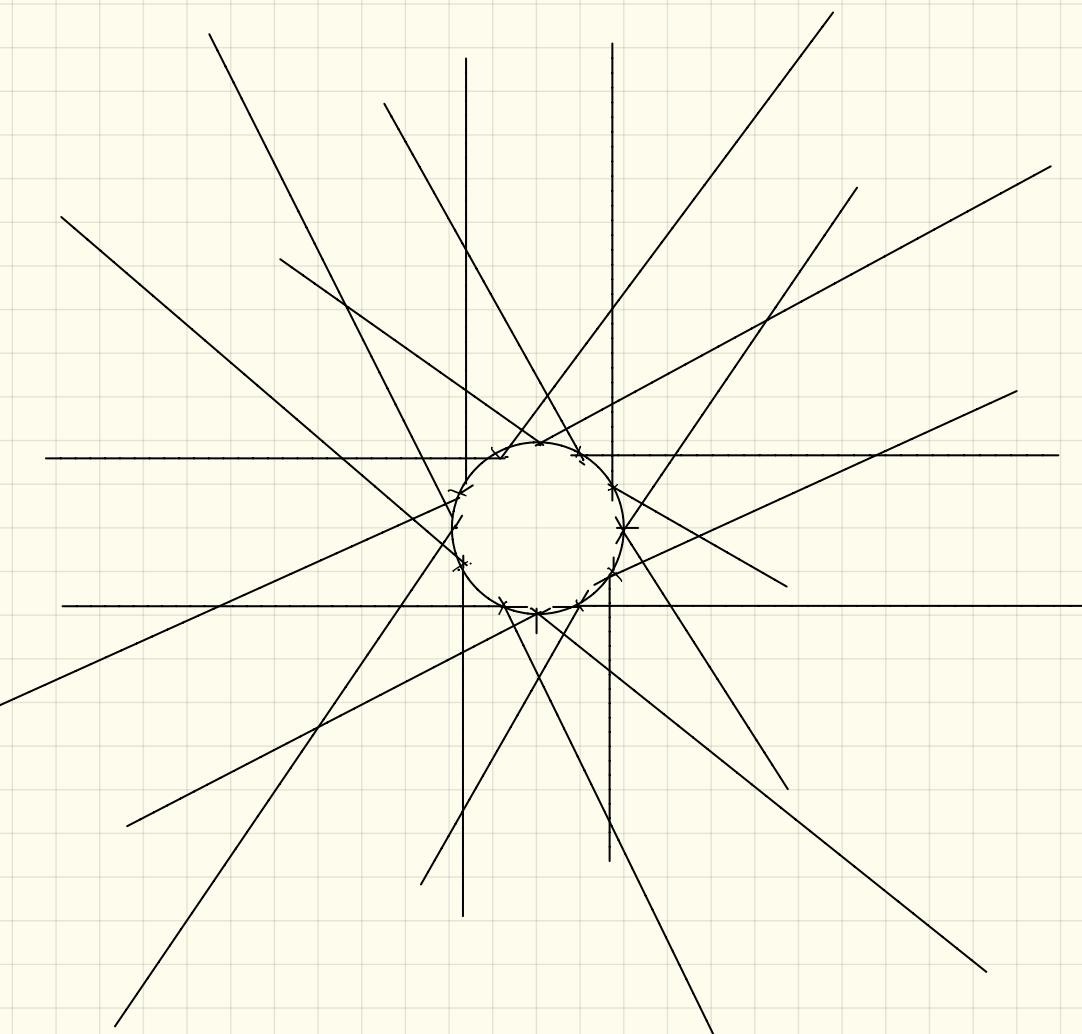


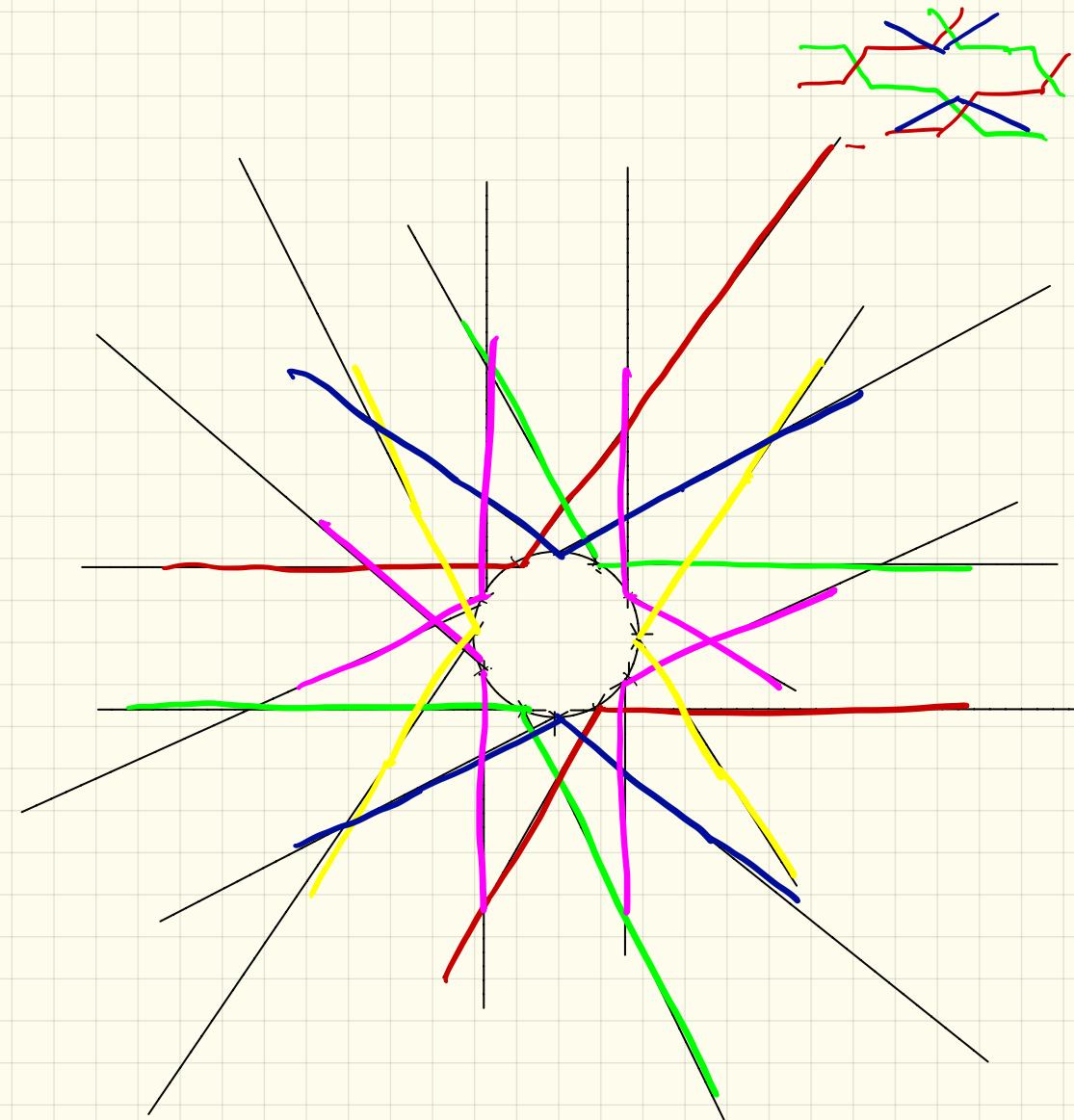


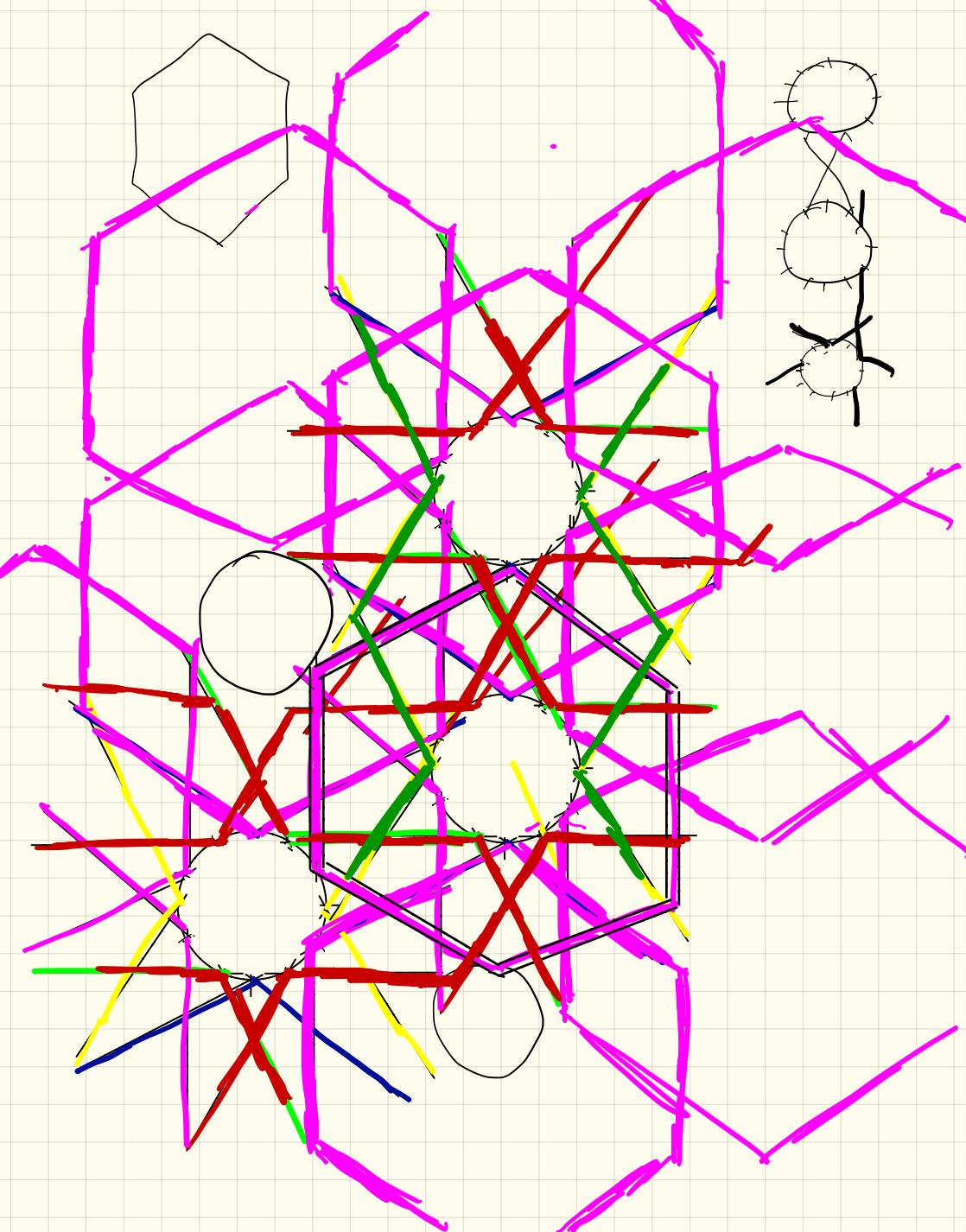


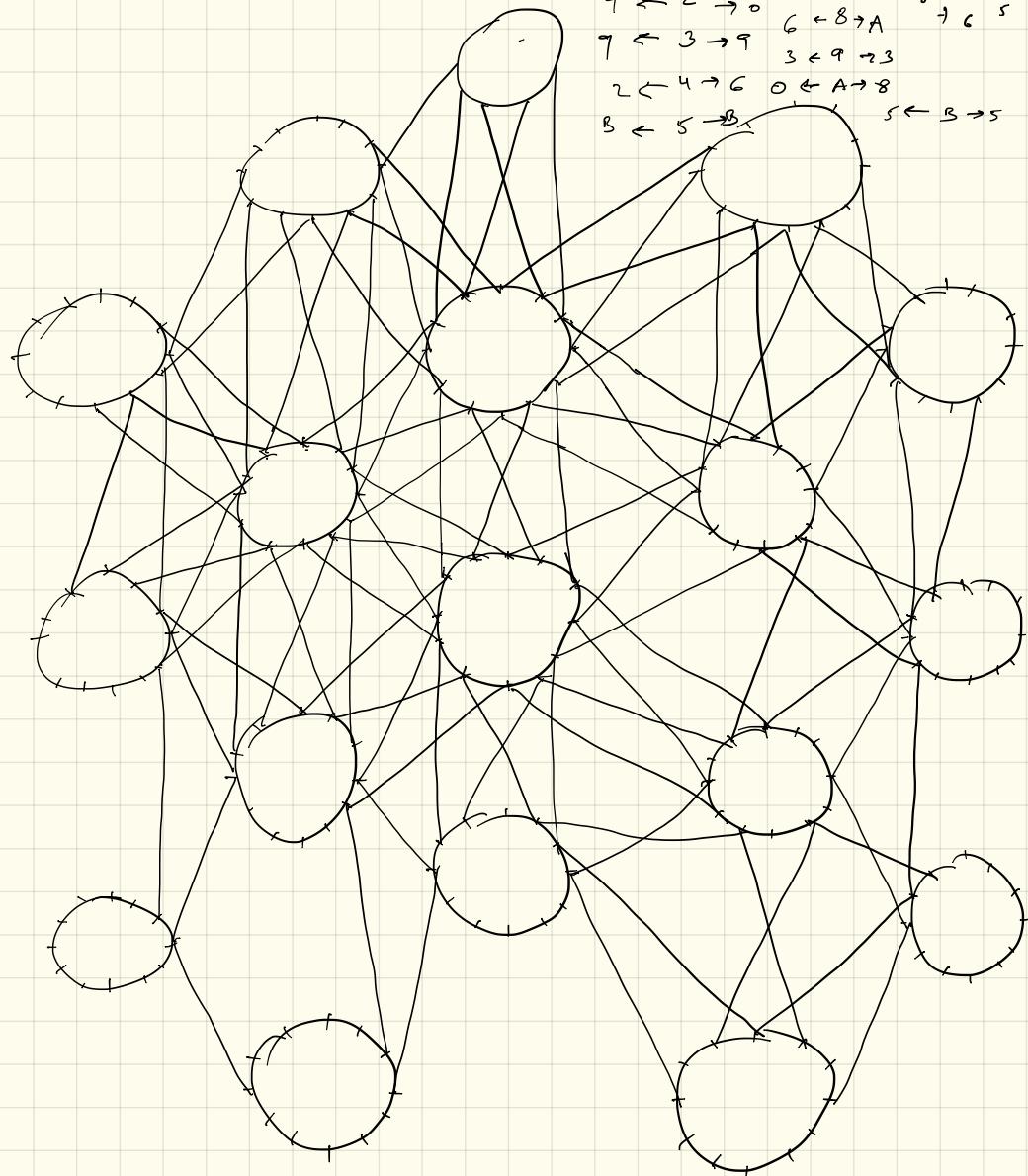


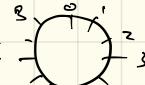


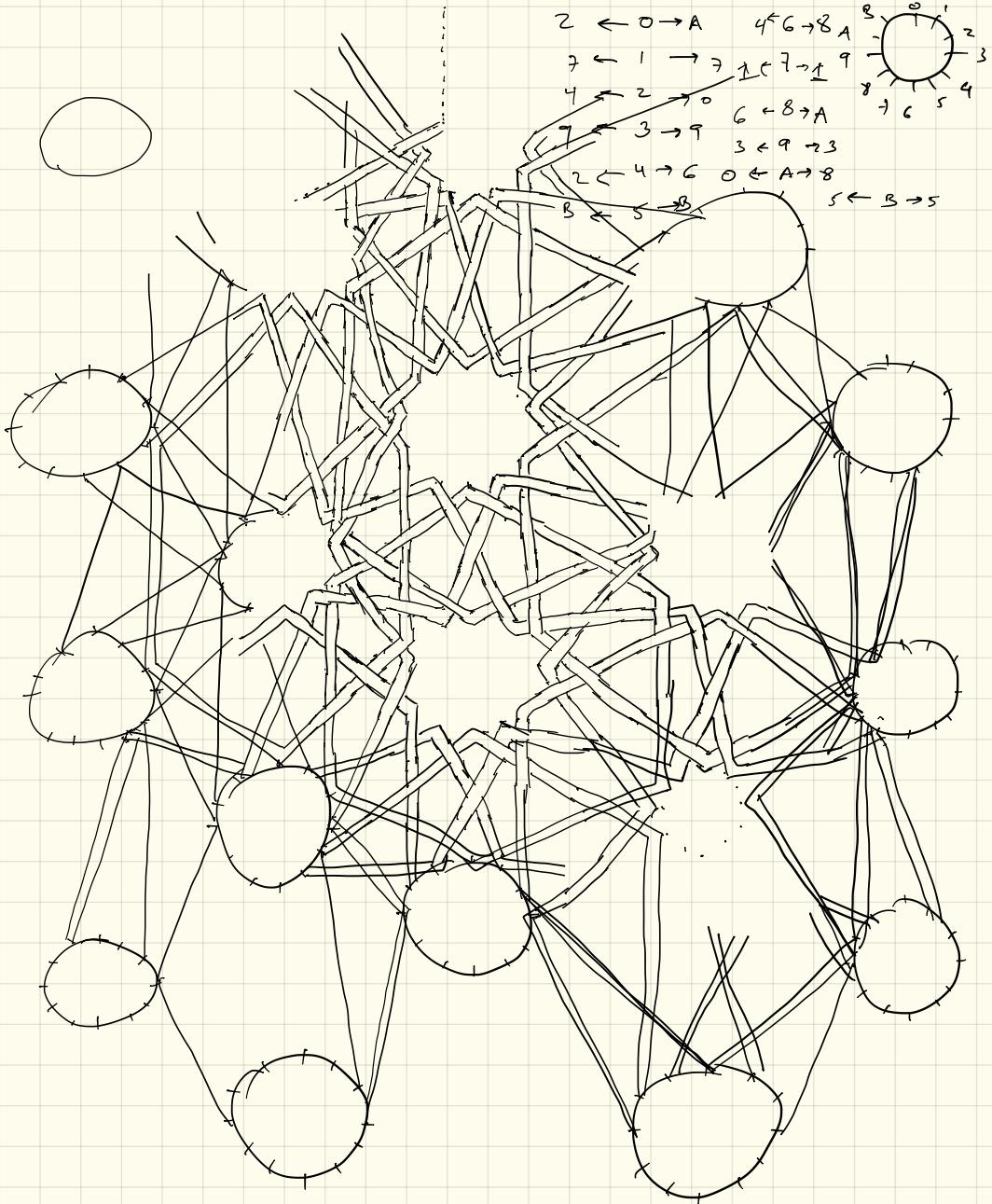




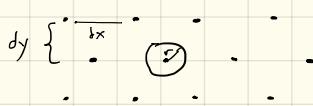




$$\begin{aligned}
 & 2 \leftarrow 0 \rightarrow A & 4 \leftarrow 6 \rightarrow 8 & A \\
 & 7 \leftarrow 1 \rightarrow 7 & 1 \leftarrow 7 \rightarrow 1 & 9 \\
 & 4 \leftarrow 2 \rightarrow 0 & 6 \leftarrow 8 \rightarrow A & 3 \\
 & 9 \leftarrow 3 \rightarrow 9 & 3 \leftarrow 9 \rightarrow 3 & \\
 & 2 \leftarrow 4 \rightarrow 6 & 0 \leftarrow A \rightarrow 8 & \\
 & B \leftarrow 5 \rightarrow B & & 5 \leftarrow B \rightarrow 5
 \end{aligned}$$


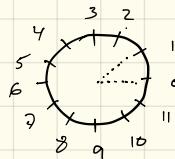
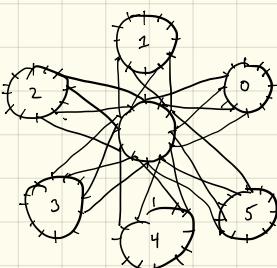
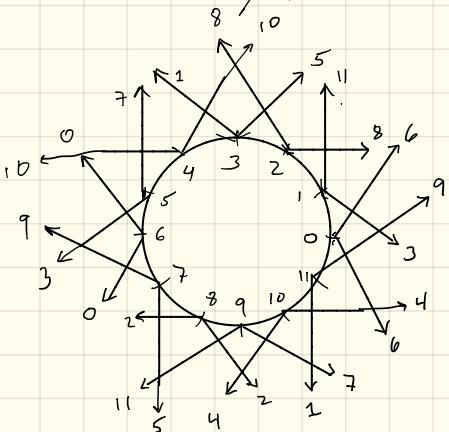
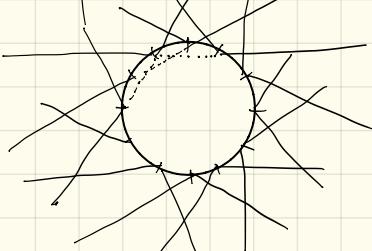


1. grid of circles radious  $r$   
on lattice spacing ( $dx, dy$ )  
(offset  $dx/2$  successive rows)



2. divide circumferences in 12

3. "strapwork" connection pattern



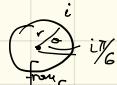
$$i \rightarrow (r \cos(\frac{i\pi}{6}), r \sin(\frac{i\pi}{6}))$$

$\circ_B$   $\circ_C$

$\circ_A$

$\circ_E$   $\circ_D$

for  $i = 0 \dots 11$   
 $\vec{f} = \text{from}_C + r(\cos \frac{i\pi}{6}, \sin \frac{i\pi}{6})$   
 for  $j = 0 \dots 11$   
 $(t_c, t_p) = \text{table}[i][j]$   
 $\vec{t} = t_c + r(\cos \frac{t_p\pi}{6}, \sin \frac{t_p\pi}{6})$   
 line( $\vec{f}, \vec{t}$ )



| table | $i$              | $(c, p)$ | $(c, p)$ |
|-------|------------------|----------|----------|
| 0     | (0, 6), (5, 6)   |          |          |
| 1     | (1, 11), (5, 3)  |          |          |
| 2     | (1, 8), (0, 8)   |          |          |
| 3     | (0, 5), (2, 1)   |          |          |
| 4     | (1, 10), (2, 10) | 1        | 3        |
| 5     | (1, 7), (3, 3)   | 5        | 11       |
| 6     | (2, 8), (3, 0)   | 8        | 9        |
| 7     | (2, 9), (4, 5)   | 2        | 8        |
| 8     | (3, 2), (4, 2)   | 3        | 2        |
| 9     | (3, 11), (5, 7)  | 9        | 7        |
| 10    | (4, 4), (5, 4)   | 6        | 6        |
| 11    | (4, 1), (0, 4)   | 7        | 0        |

4. widen  $\frac{1}{8}$   
over under ...

|    |    |   |    |   |    |
|----|----|---|----|---|----|
| 1  | 3  | 5 | 11 | 9 | 7  |
| 8  | 2  | 8 | 2  | 8 | 2  |
| 11 | 1  | 3 | 9  | 7 | 5  |
| 6  | 0  | 6 | 0  | 6 | 0  |
| 2  | 11 | 9 | 3  | 5 | 7  |
| 4  | 10 | 4 | 10 | 4 | 10 |