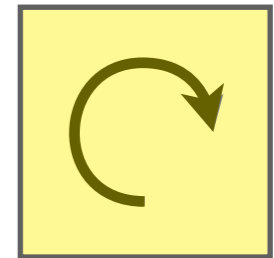
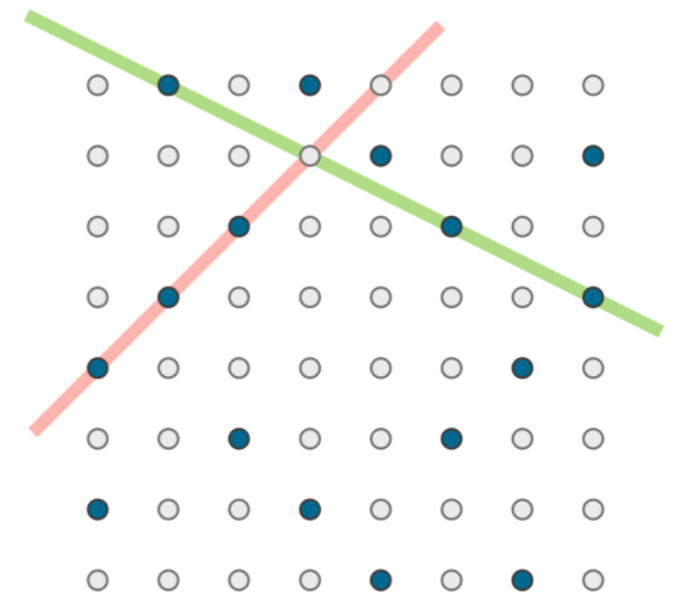
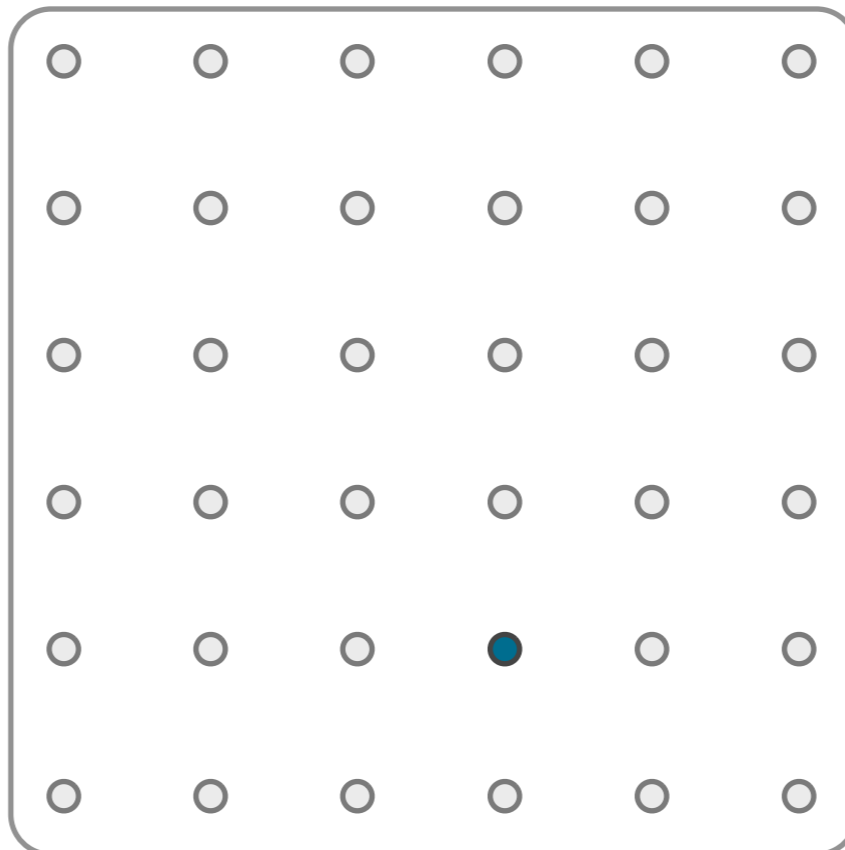
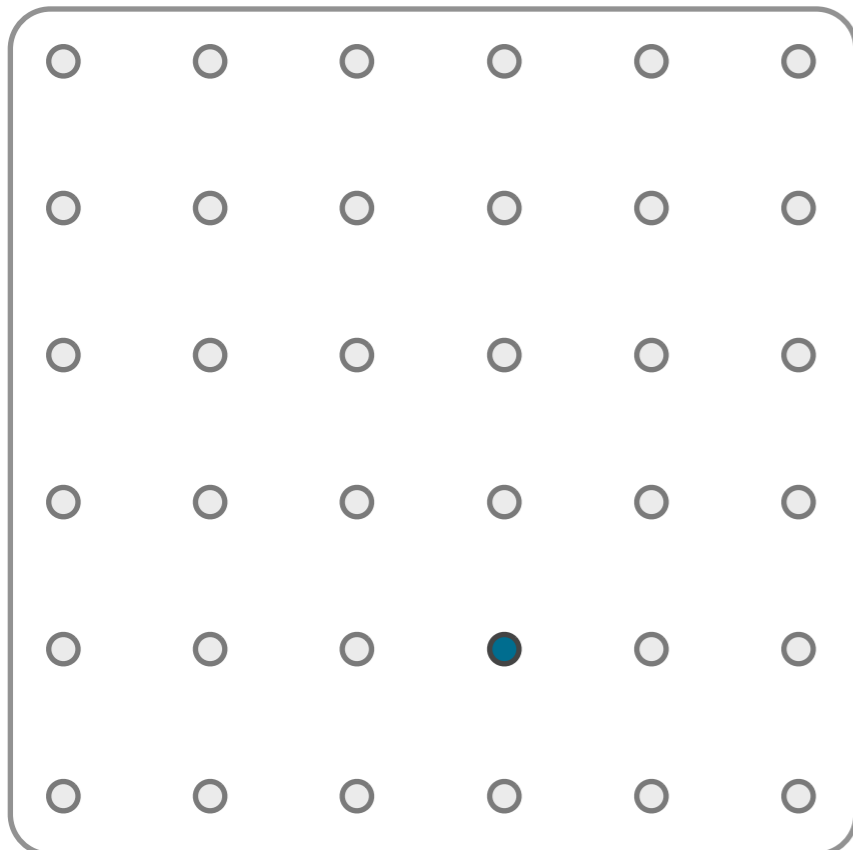
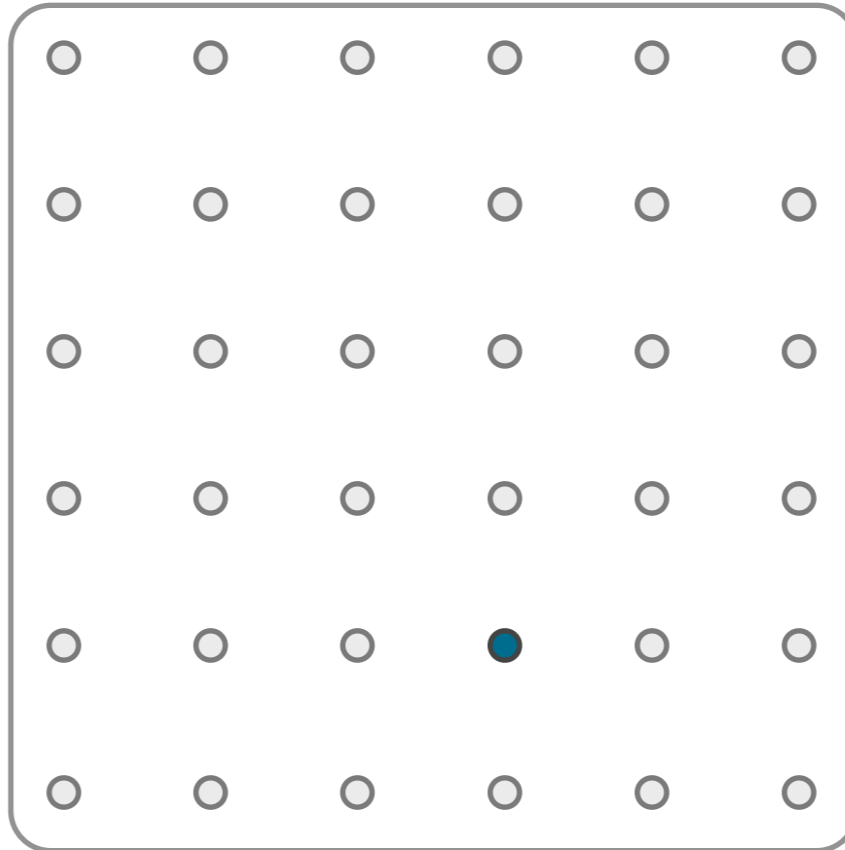
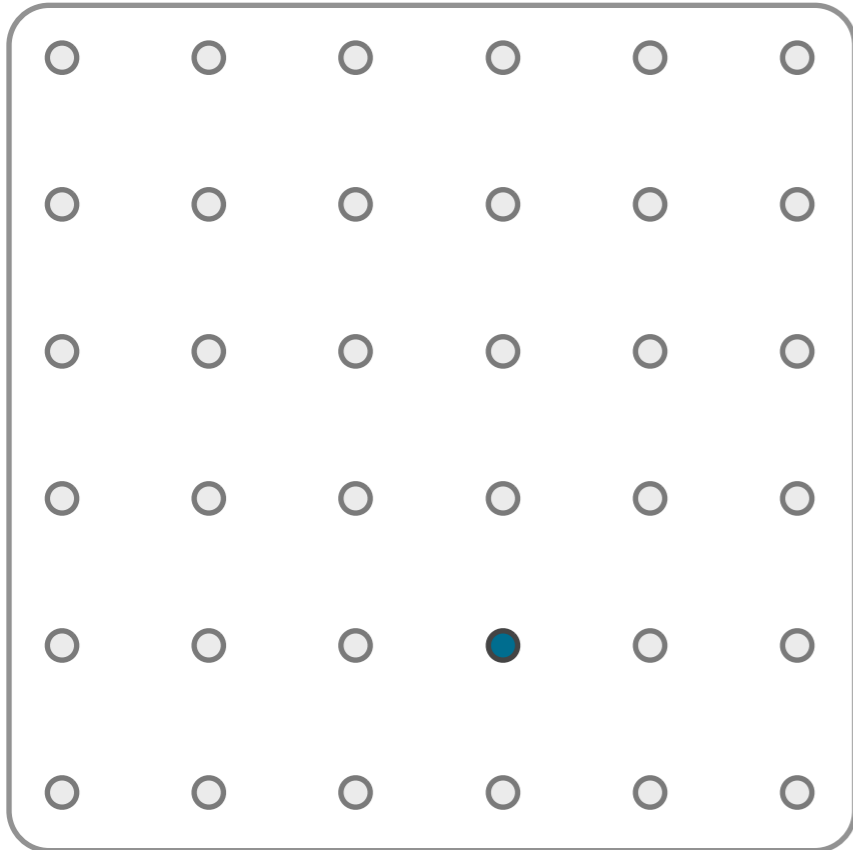


Minarets of Samarra

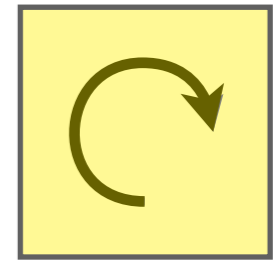


Only one minaret has been built. Build 11 more - making sure that the cities have rotational symmetry (looking the same when rotated a quarter turn) and that no three (or more) minarets lie on a line. There are 3 solutions.

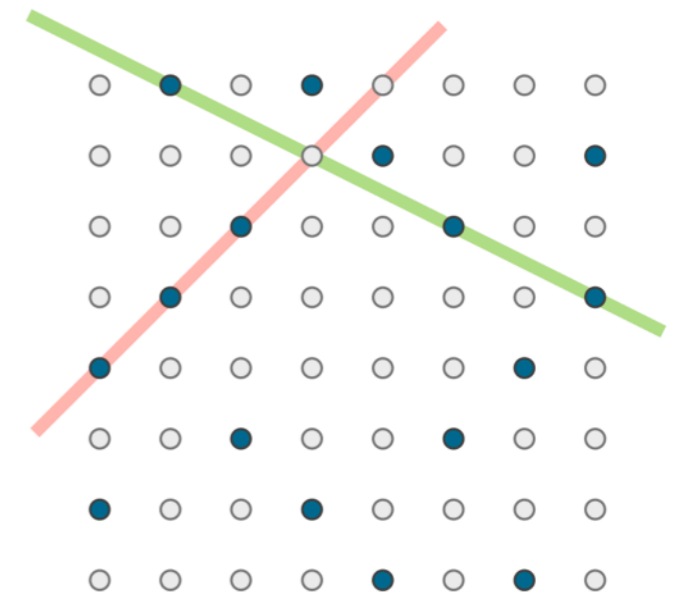
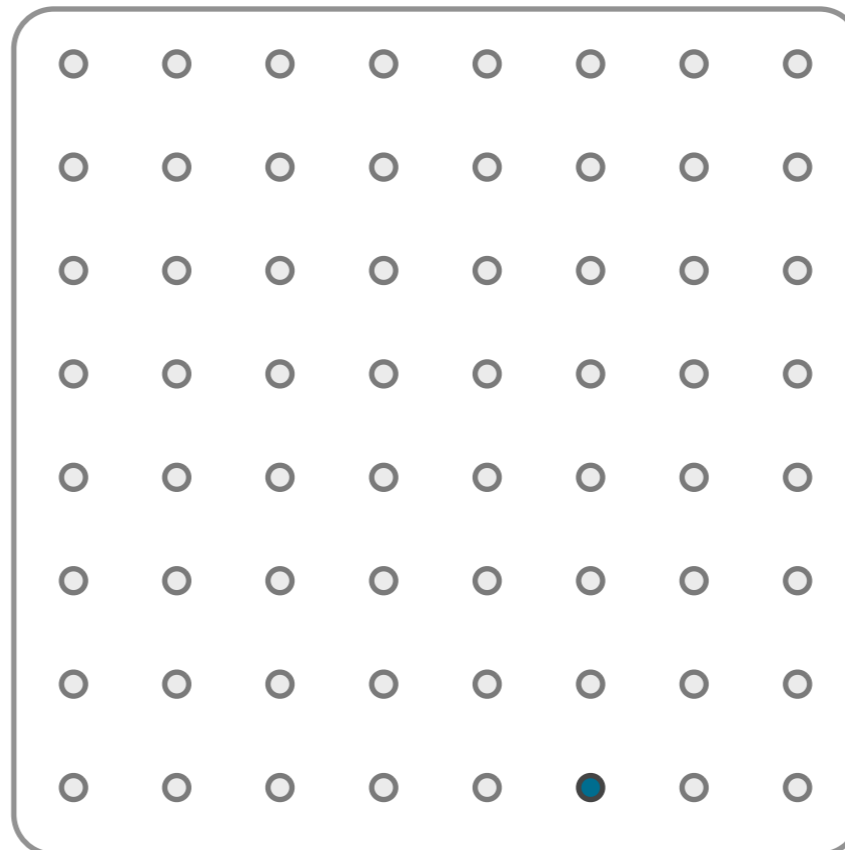
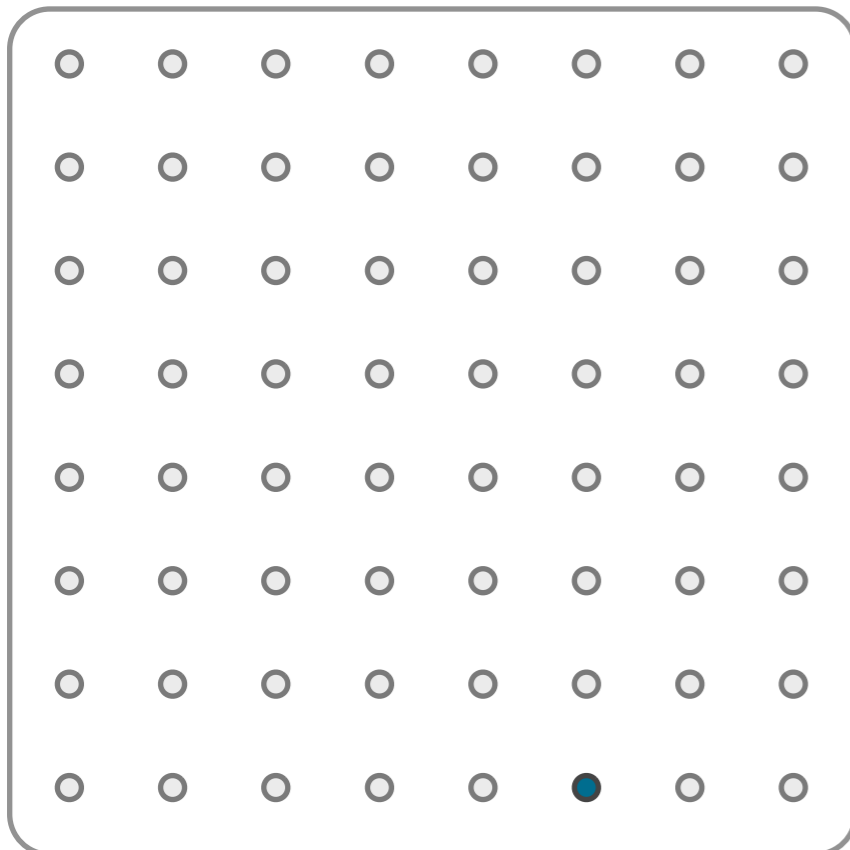
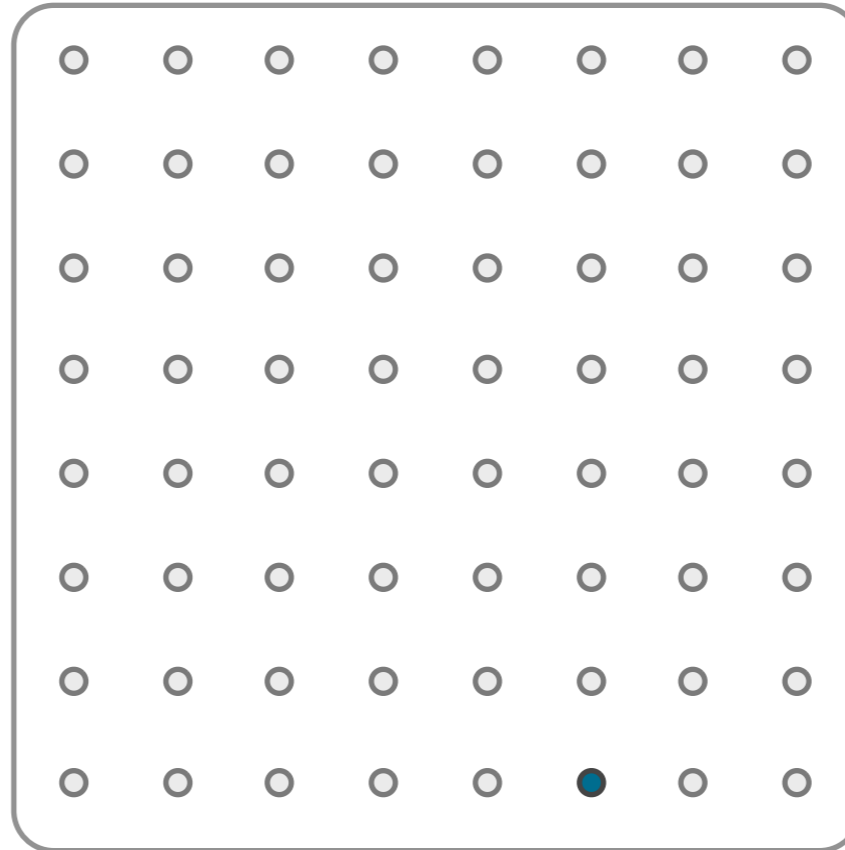
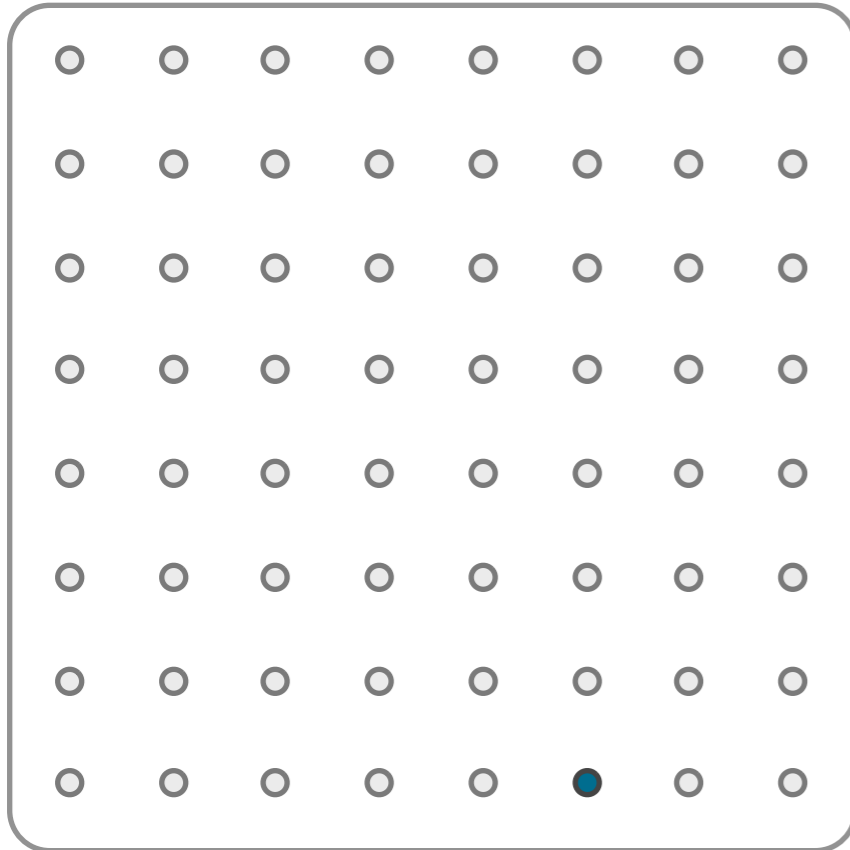


The city above is wrong because the red and green lines have three minarets.

Minarets of Algiers

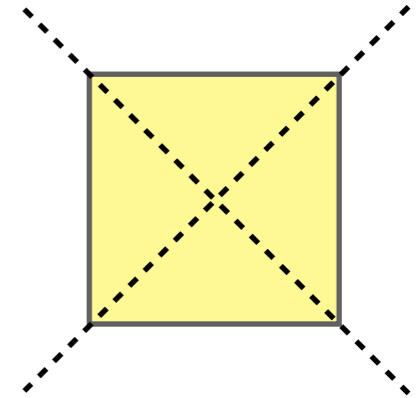


Only one minaret has been built. Build 15 more - making sure that the cities have rotational symmetry (looking the same when rotated a quarter turn) and that no three (or more) minarets lie on a line. There are 4 solutions.

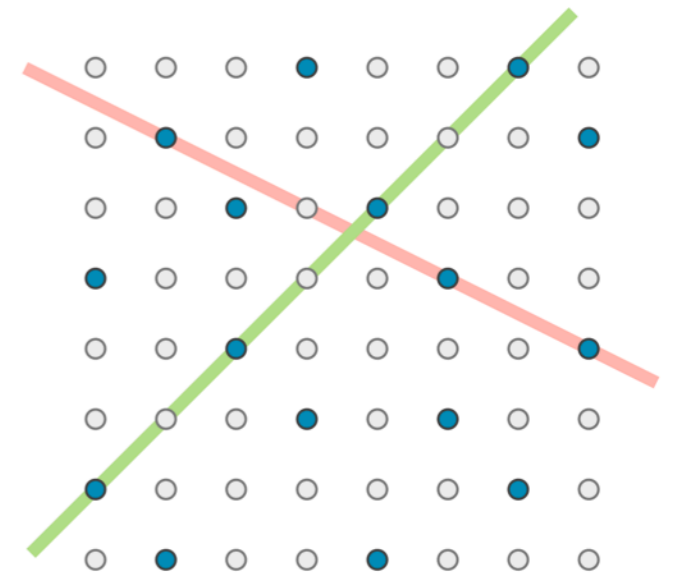
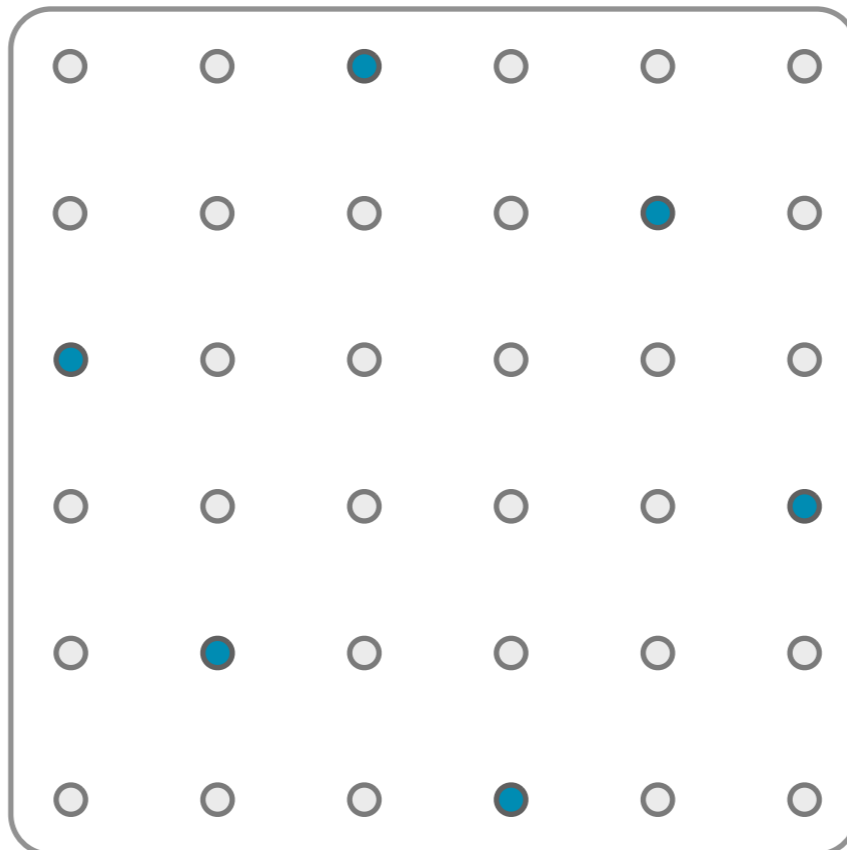
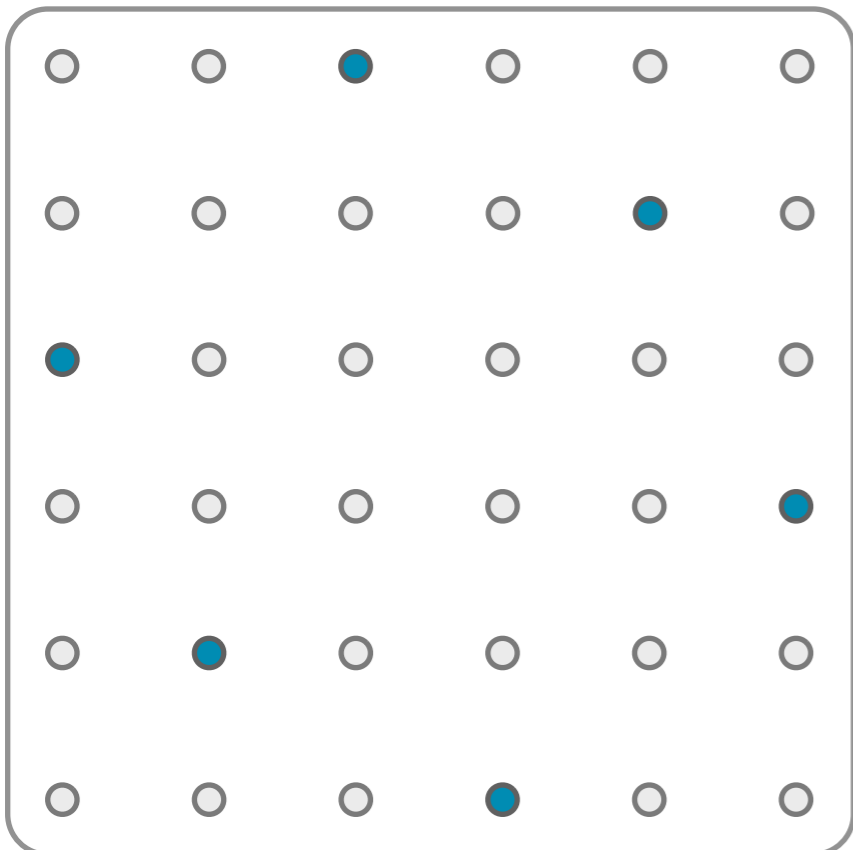
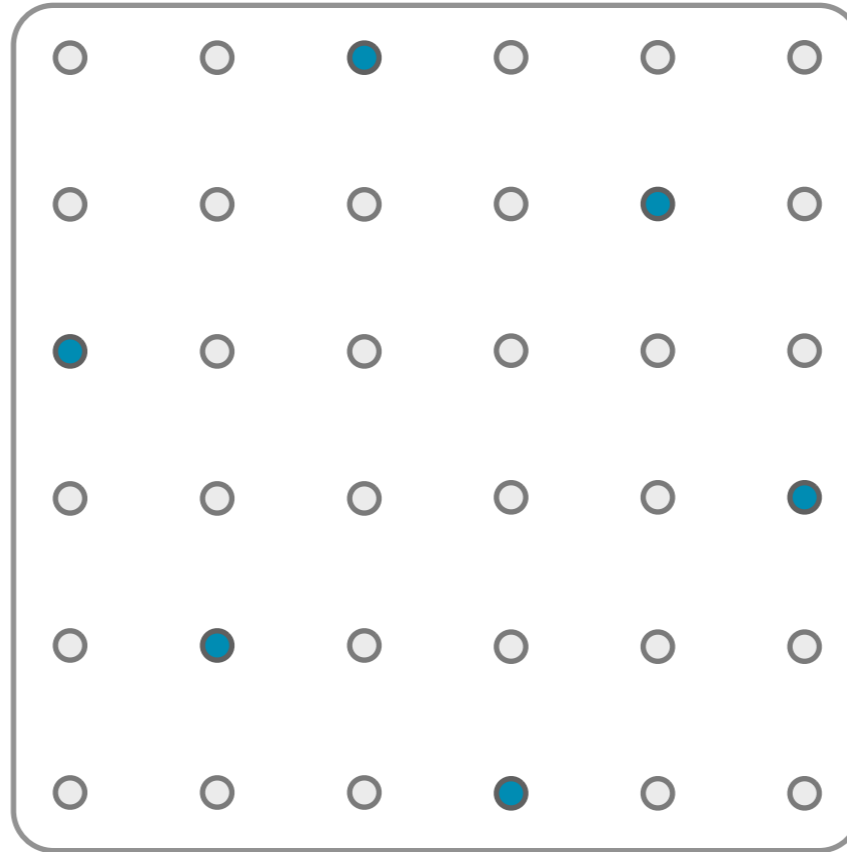
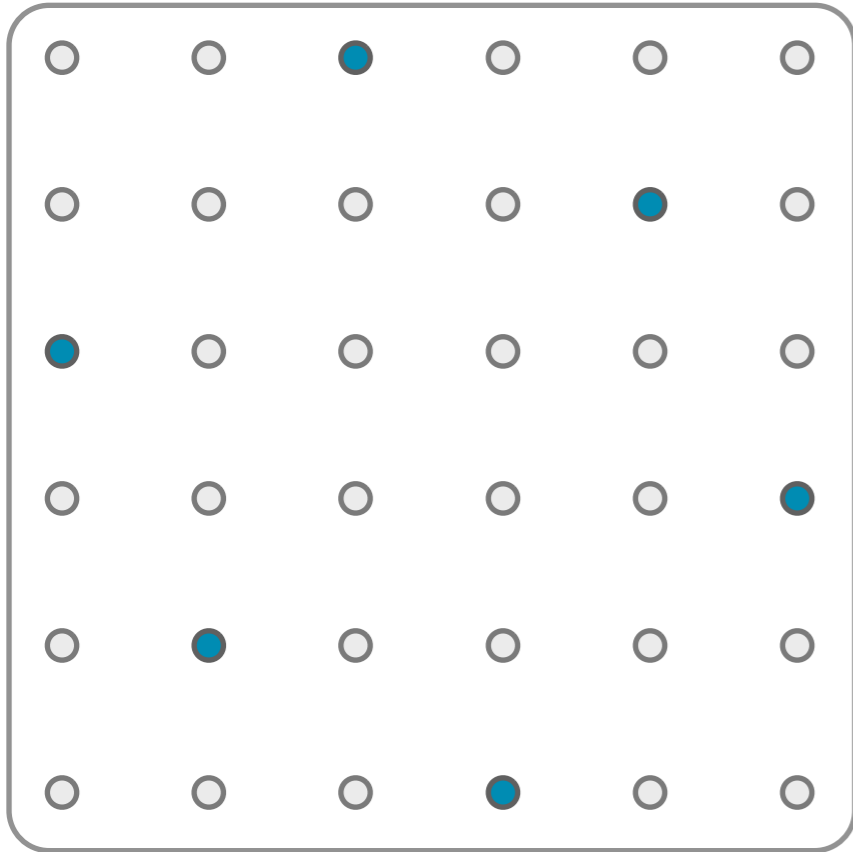


The city above is wrong because the red and green lines have three minarets.

Minarets of Seville & Granada

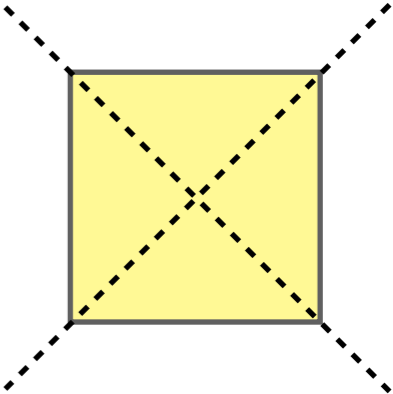
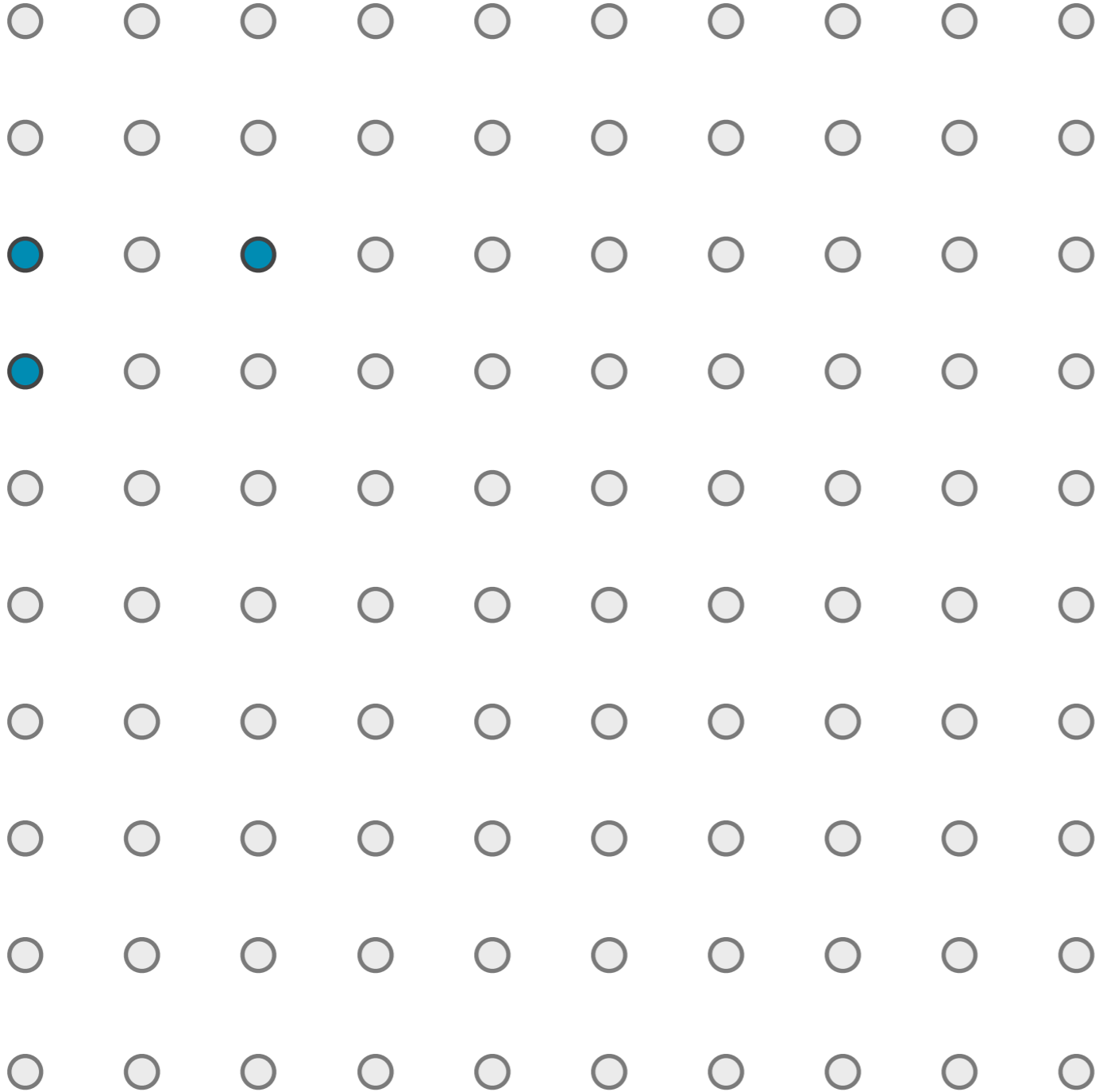


Six minarets have already been built. Build 6 more making sure that each city has mirror symmetry through both diagonals and that no three minarets lie on a line. Find 2 solutions.

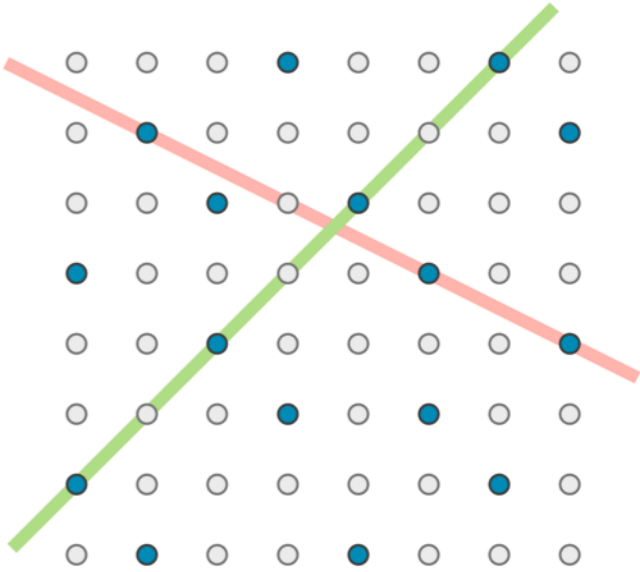


The city above is wrong because the red line has three minarets. It is also wrong because the green line has more than three.

Minarets of Istanbul

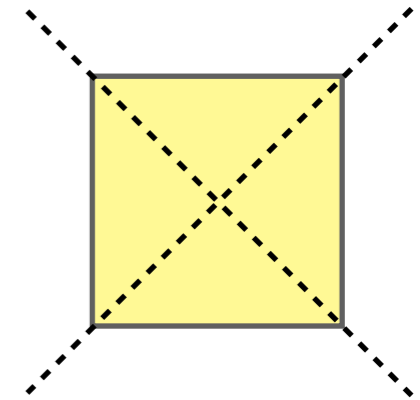
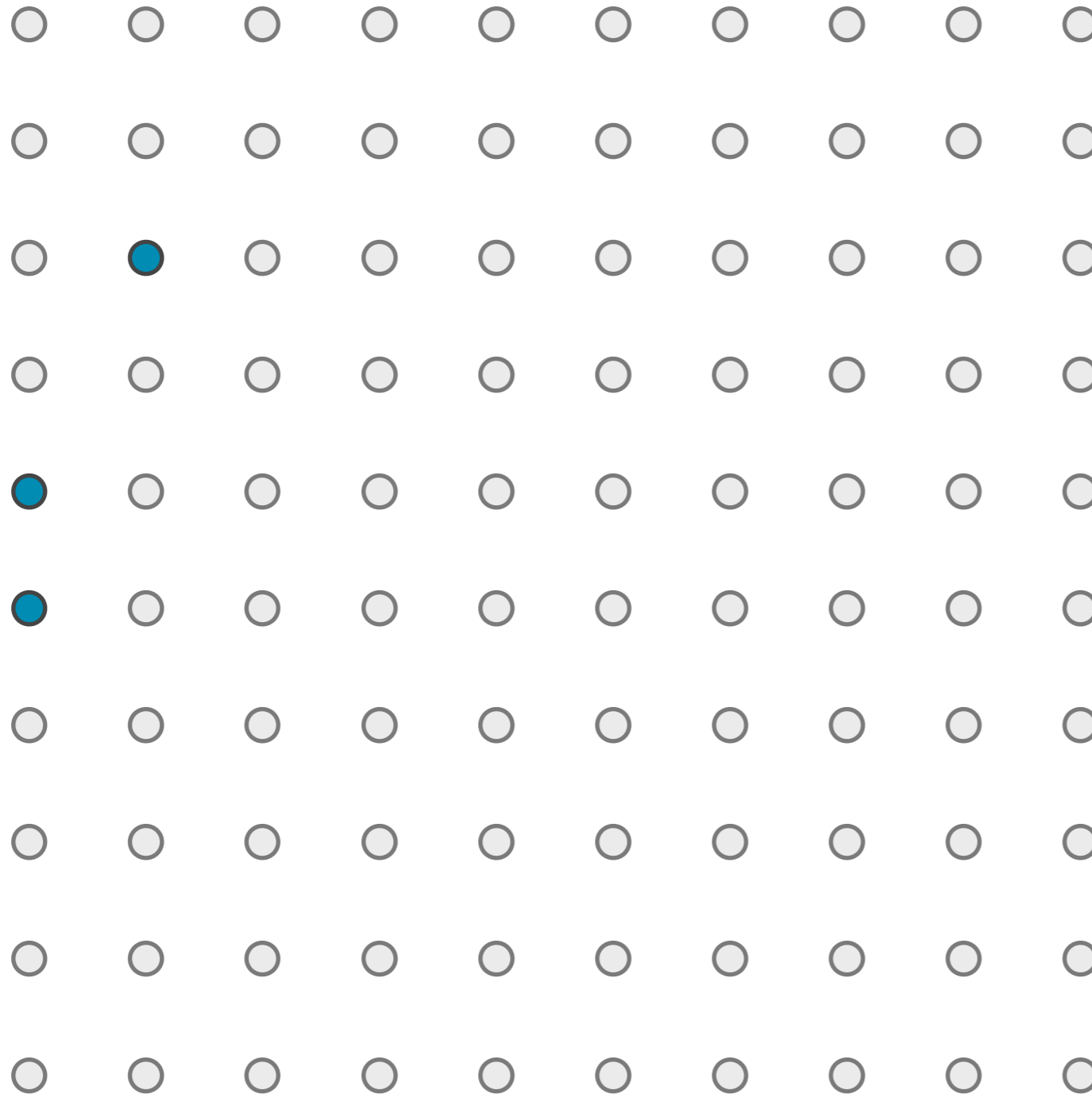


Here are 3 minarets. Add 17 more minarets to Istanbul making sure that the city has mirror symmetry through both diagonals and that no three minarets lie on a line.

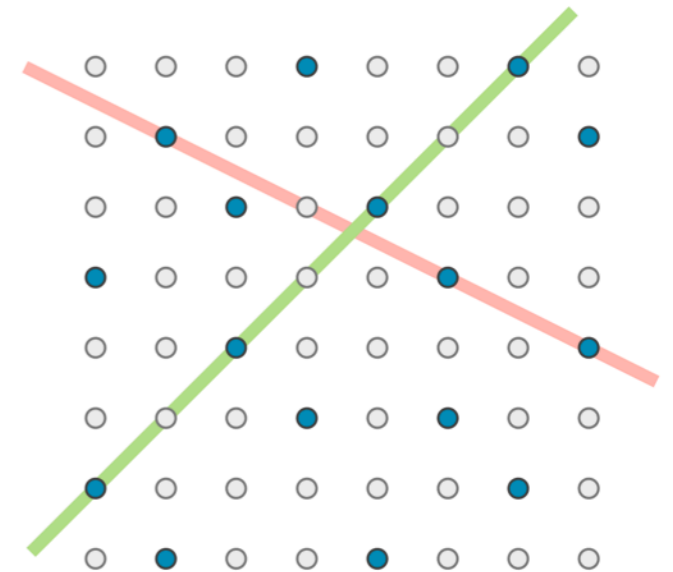


The city above is wrong because the red line has three minarets. It is also wrong because the green line has more than three.

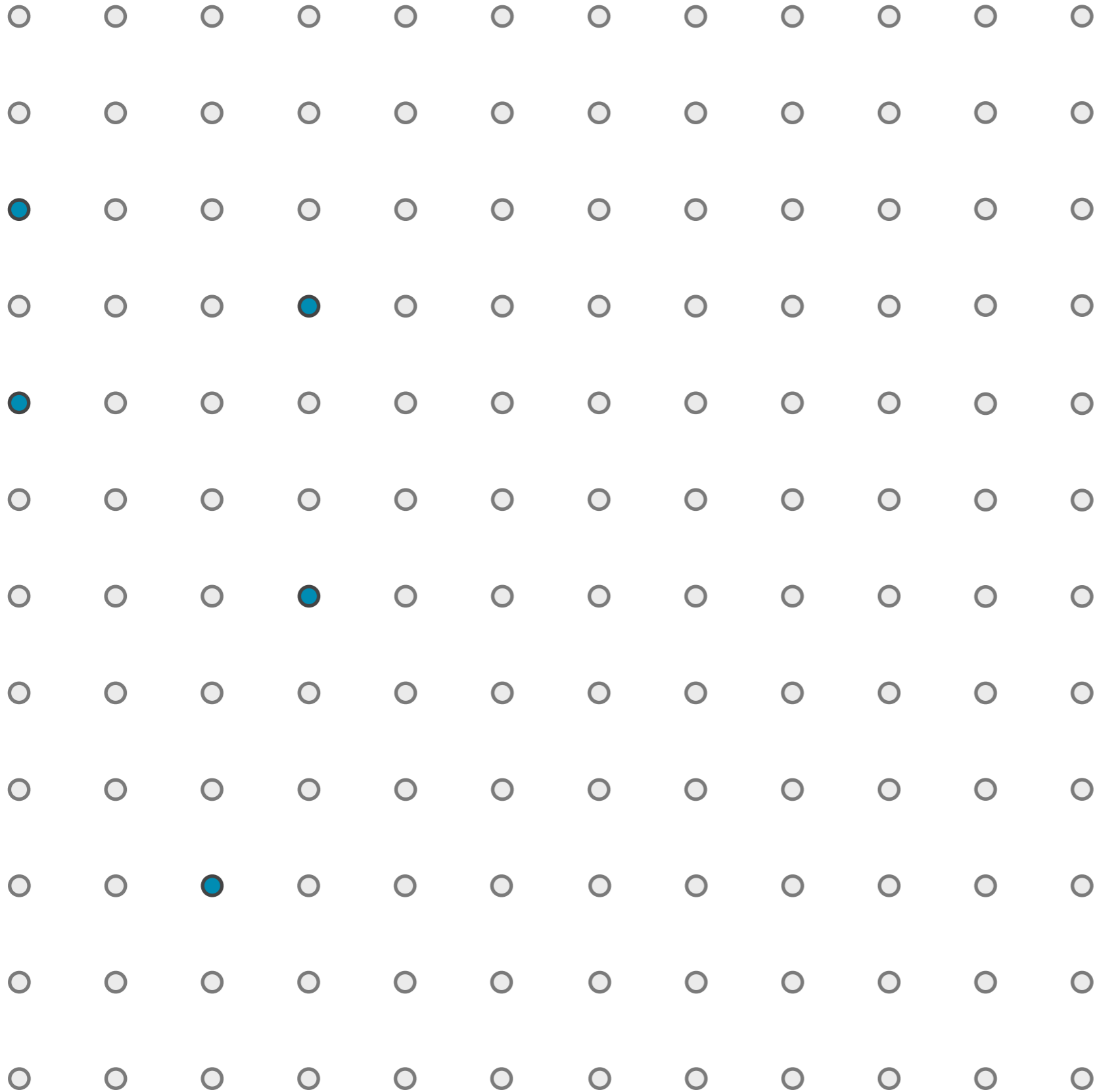
Minarets of Baghdad



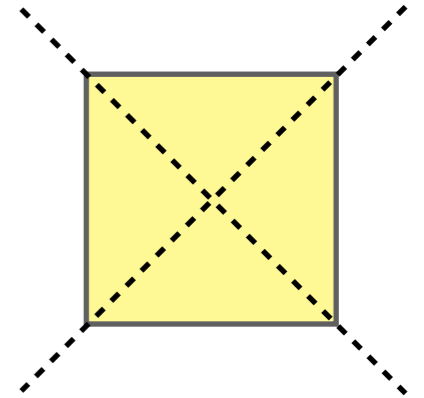
Here are 3 minarets. Add 17 more minarets to Baghdad making sure that the city has mirror symmetry through both diagonals and that no three minarets lie on a line.



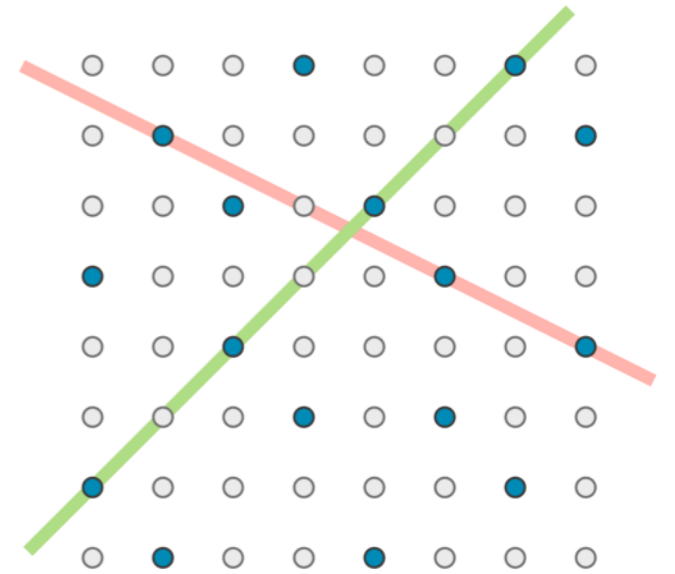
The city above is wrong because the red line has three minarets. It is also wrong because the green line has more than three.



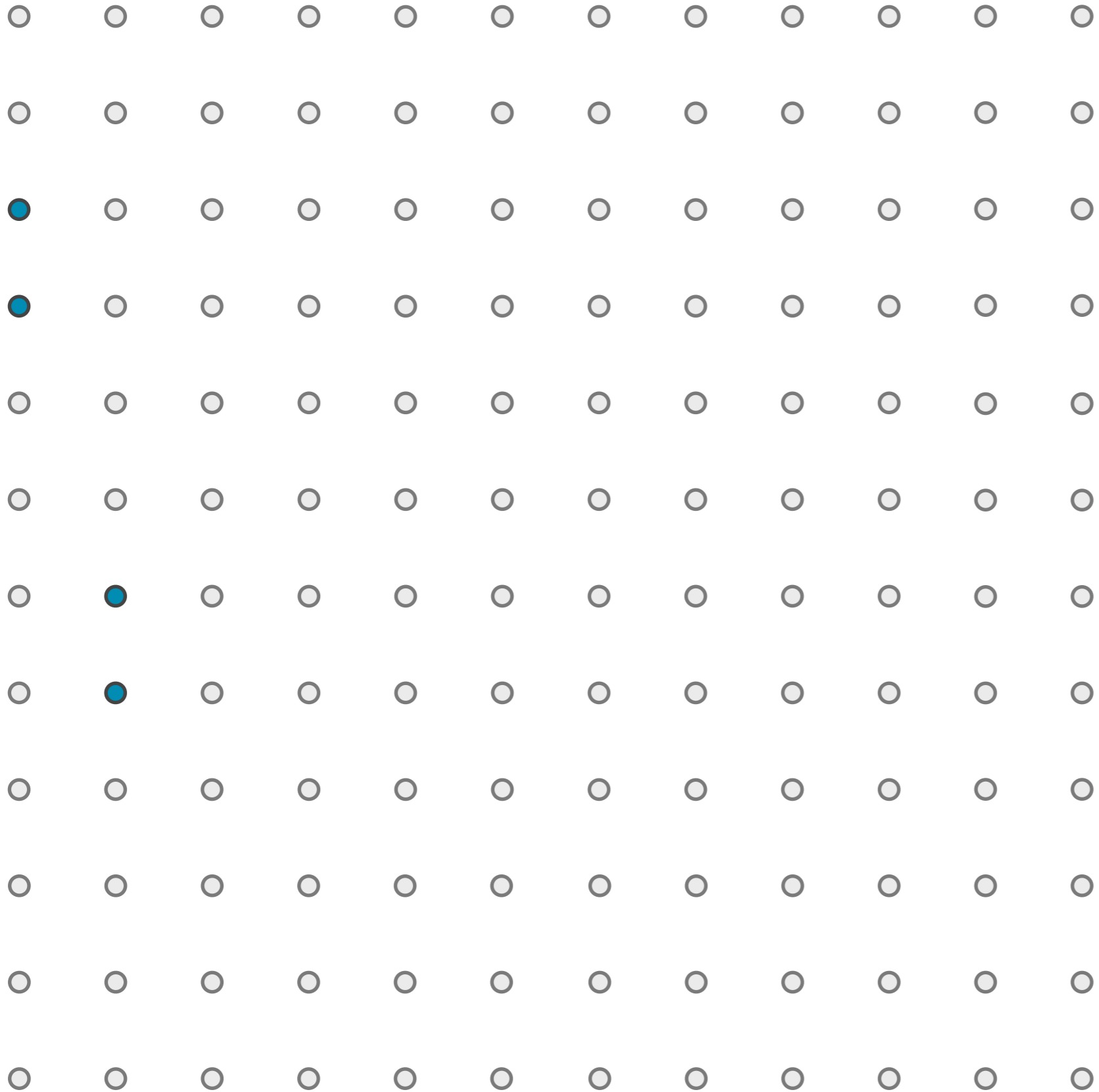
Minarets of Karachi



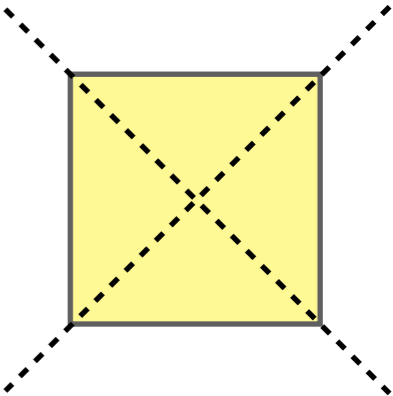
Here are 5 minarets. Add 19 more minarets to Granada making sure that the city has mirror symmetry through both diagonals and that no three minarets lie on a line.



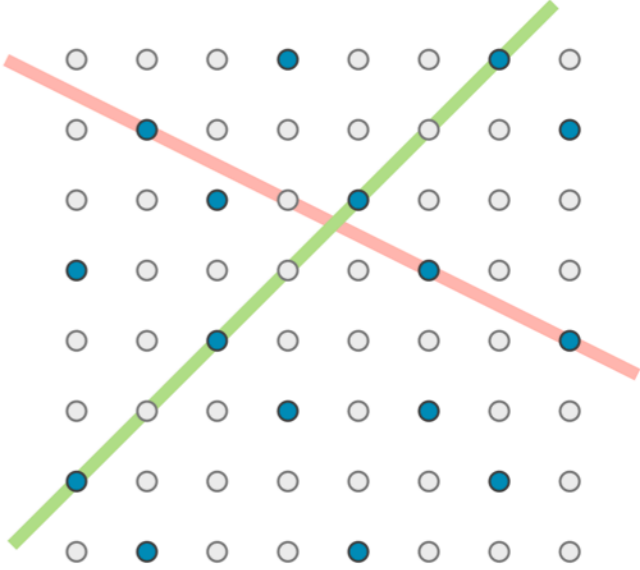
The city above is wrong because the red line has three minarets. It is also wrong because the green line has more than three.



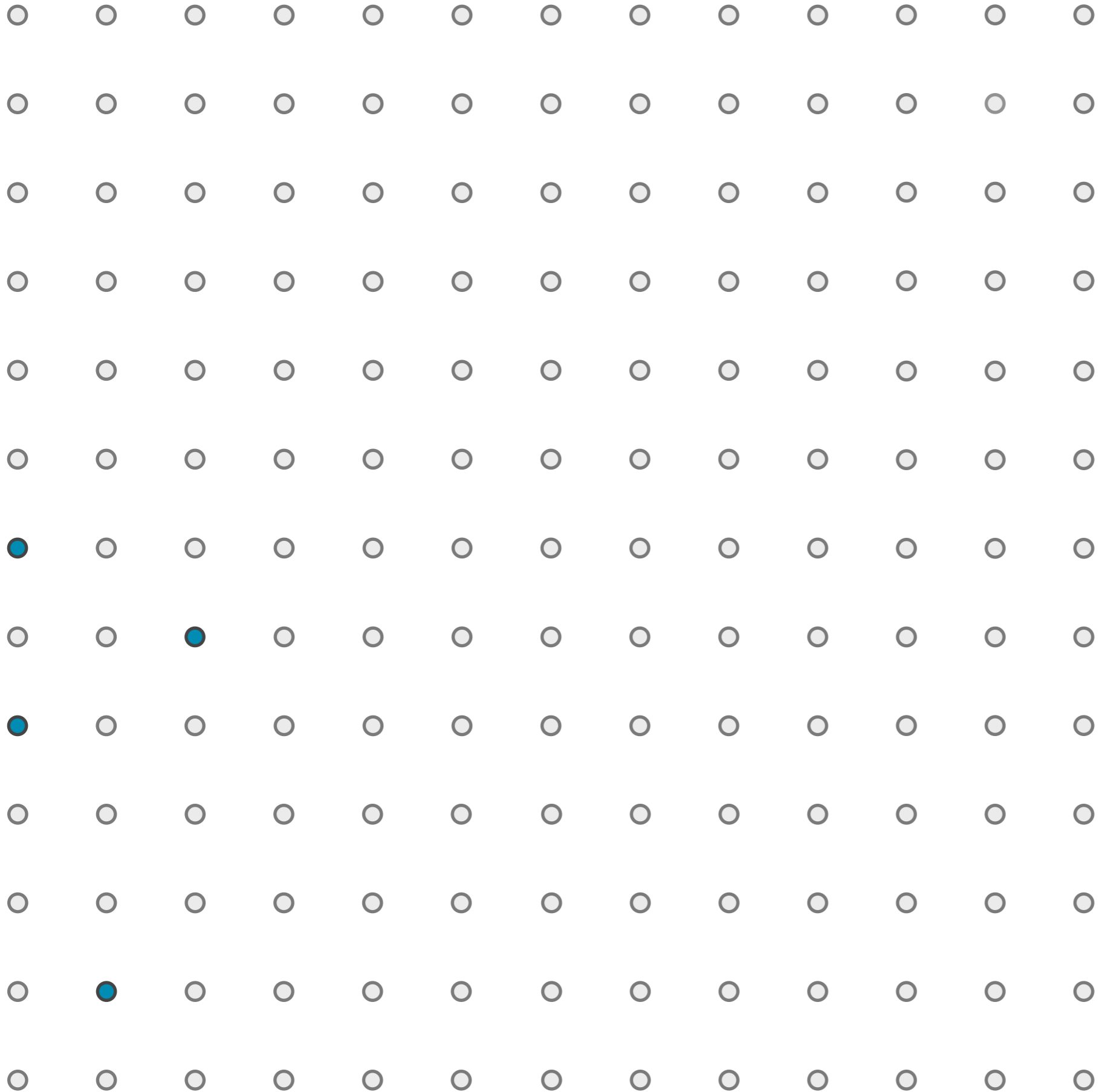
Minarets of Delhi



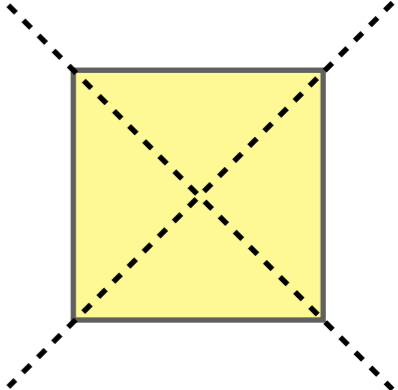
Here are 4 minarets. Add minarets so each row has two - making sure that the city has mirror symmetry through both diagonals and that no three minarets lie on a line.



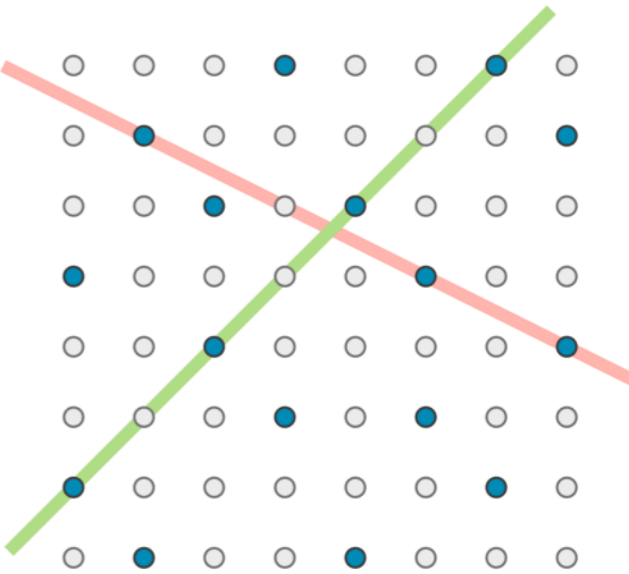
The city above is wrong because the red line has three minarets. It is also wrong because the green line has more than three.



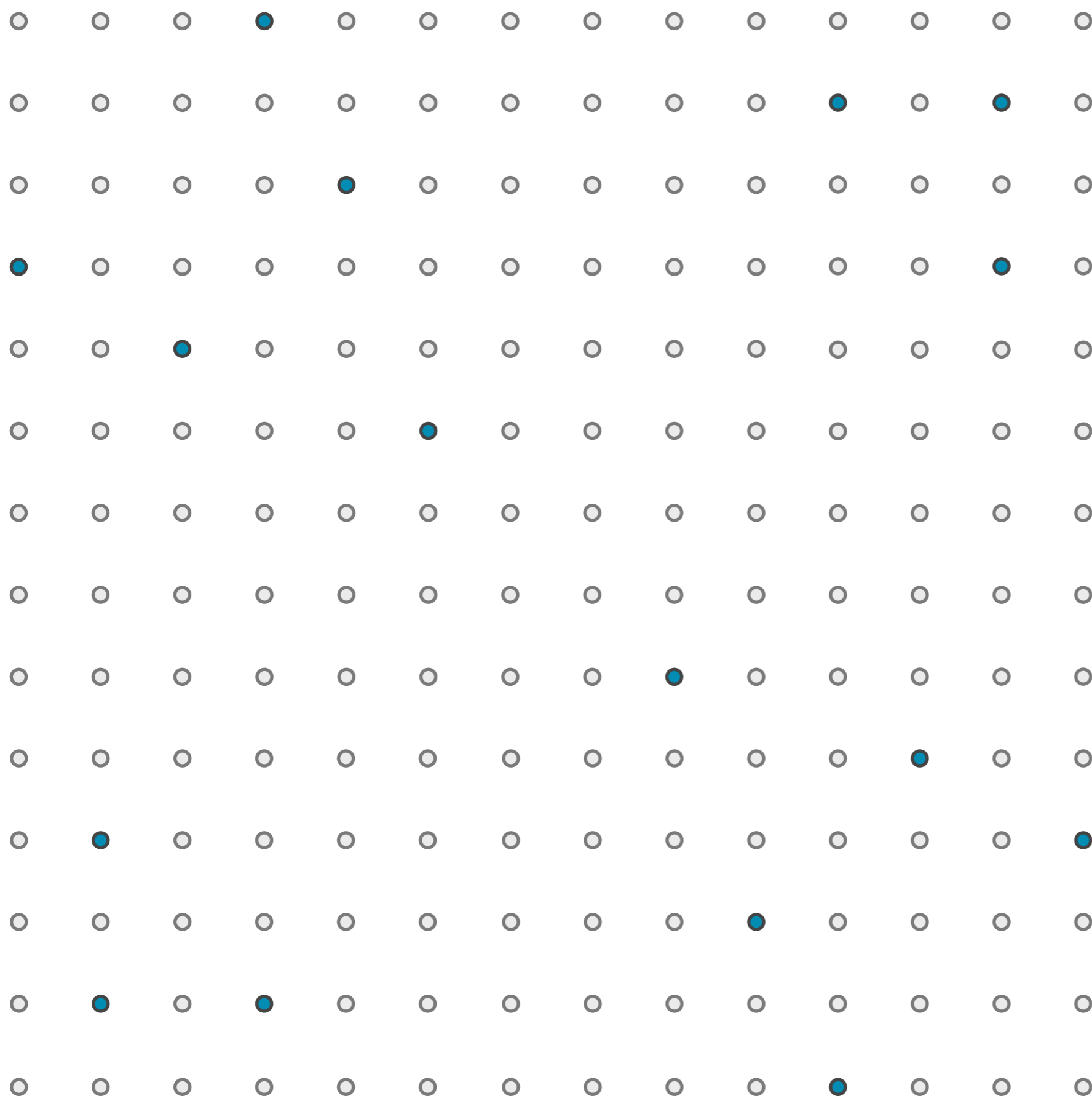
Minarets of Mecca



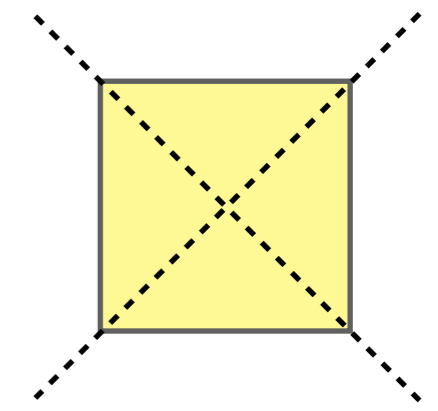
Here are 4 minarets. Add minarets so each row has two - making sure that the city has mirror symmetry through both diagonals and that no three minarets lie on a line.



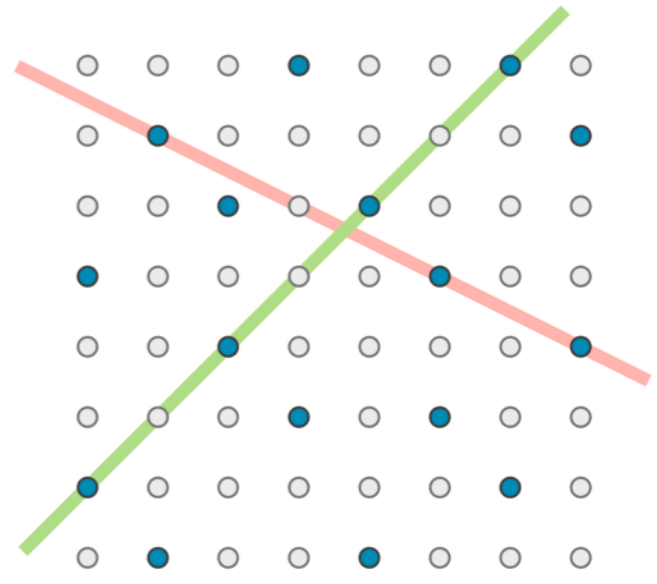
The city above is wrong because the red line has three minarets. It is also wrong because the green line has more than three.



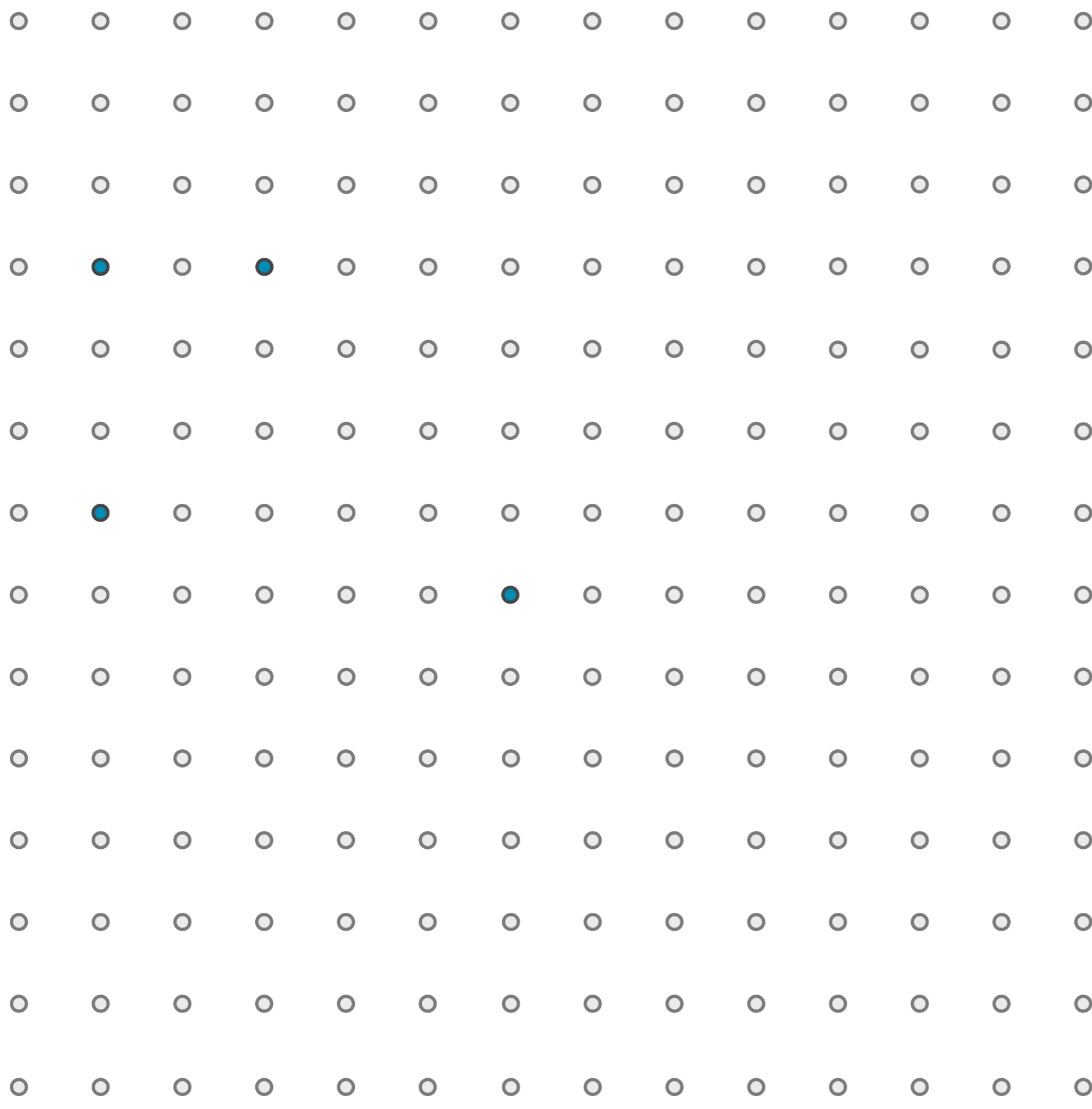
Minarets of Jakarta



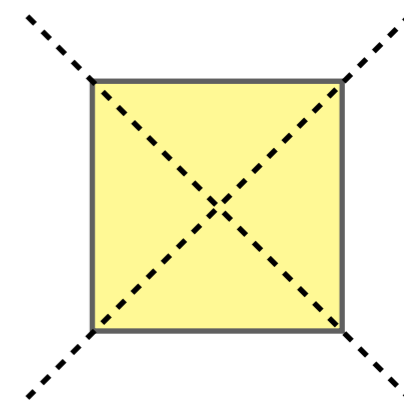
Build so that each row has two minarets - making sure that the city has mirror symmetry through both diagonals and that no three minarets lie on a line.



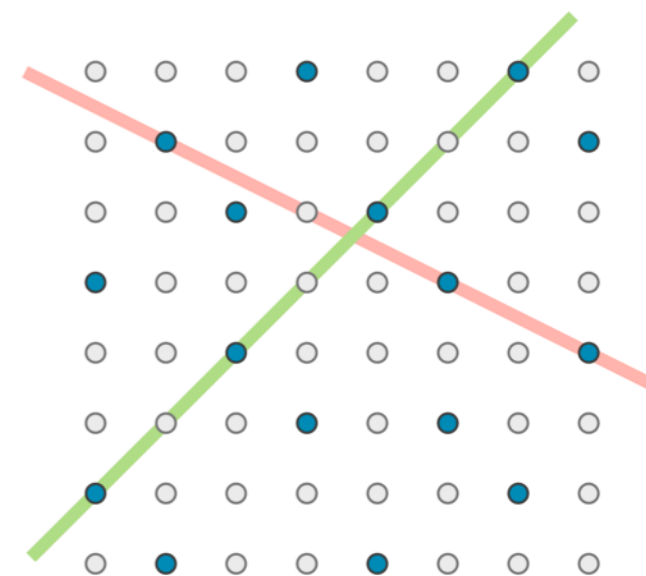
The city above is wrong because the red line has three minarets. It is also wrong because the green line has more than three.



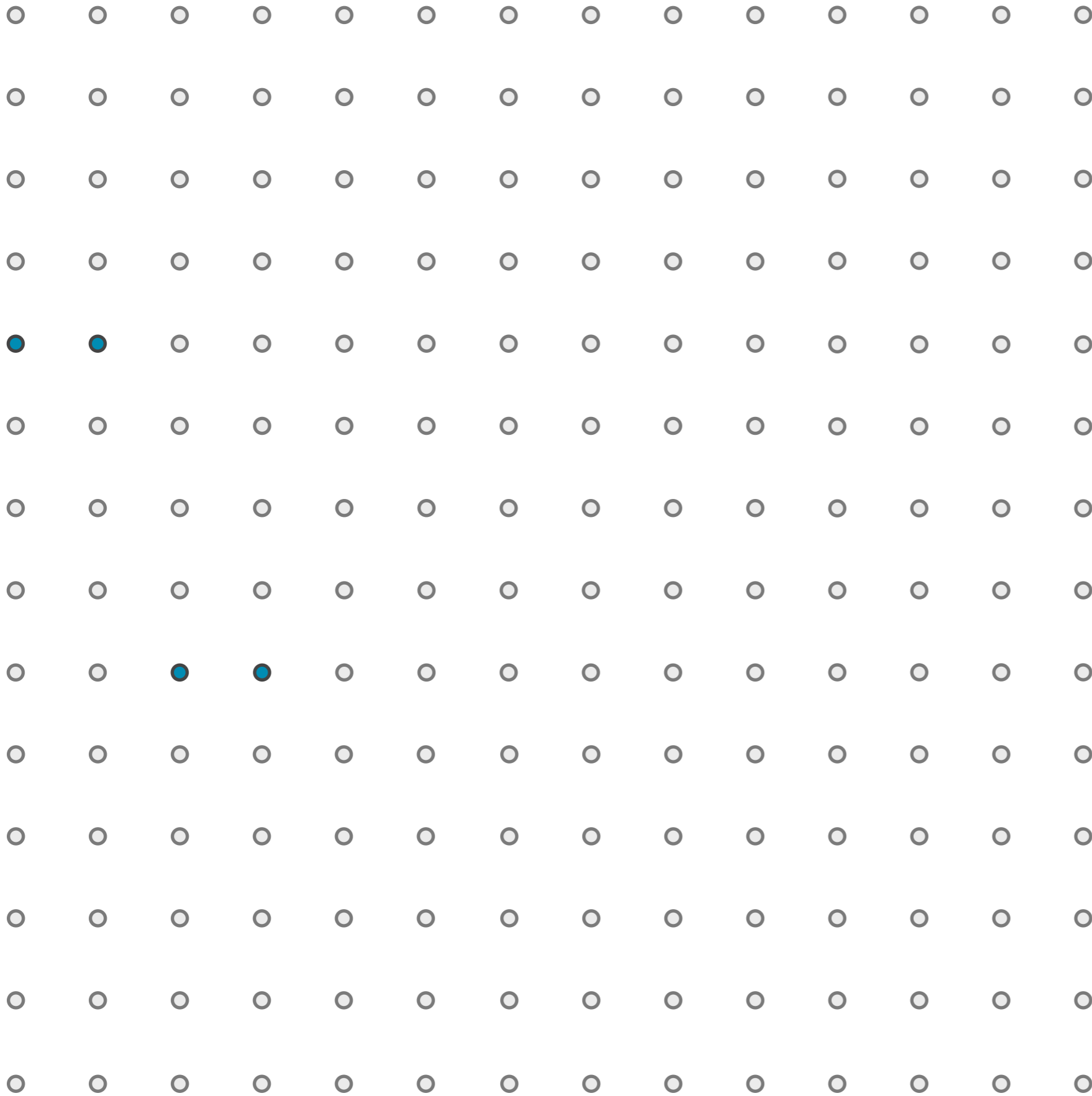
Minarets of Tehran



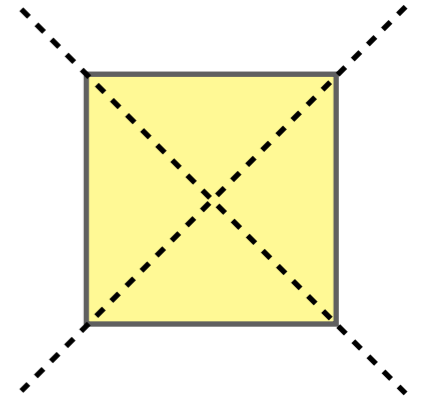
Here are 4 minarets. Build so that each row has two - making sure that the city has mirror symmetry through both diagonals and that no three minarets lie on a line.



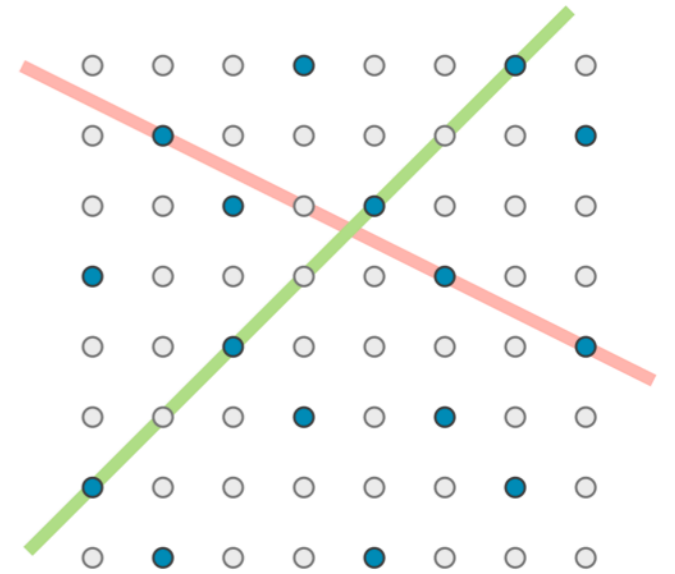
The city above is wrong because the red line has three minarets. It is also wrong because the green line has more than three.



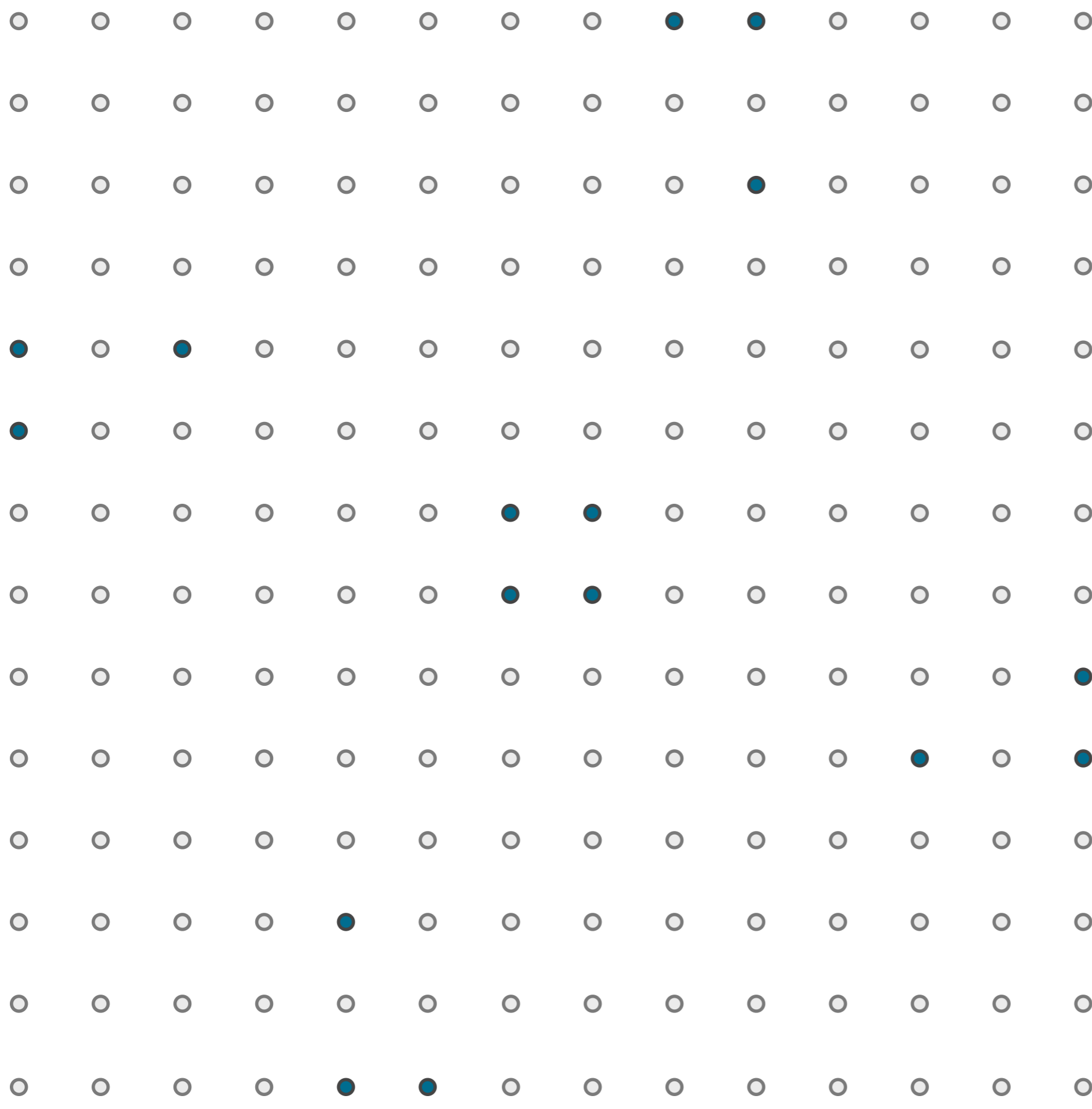
Minarets of Cairo



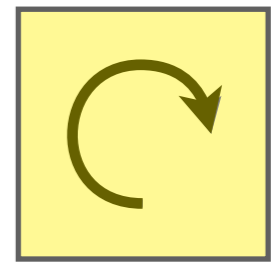
Here are 4 minarets. Build so that each row has two - making sure that the city has mirror symmetry through both diagonals and that no three minarets lie on a line.



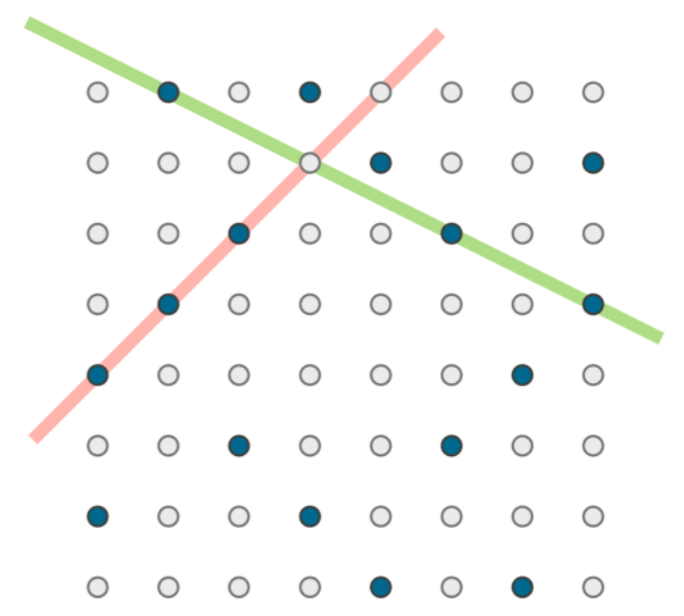
The city above is wrong because the red line has three minarets. It is also wrong because the green line has more than three.



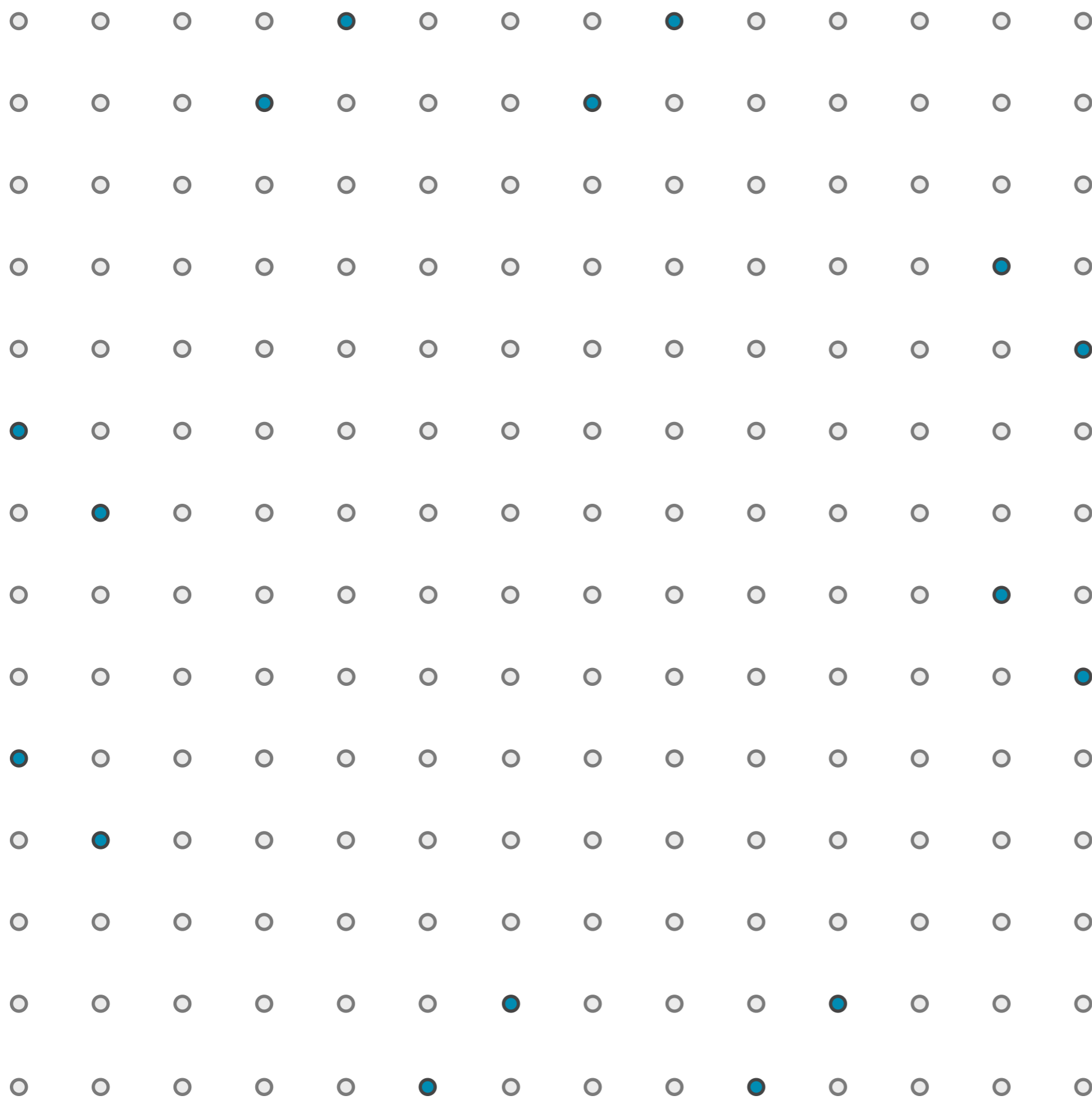
Minarets of Tunis



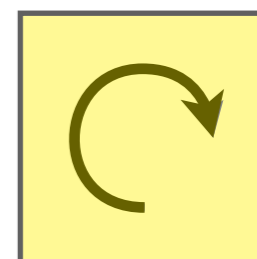
Many minarets have been built. Build more so that each row has two - making sure that Tunis has rotational symmetry (looking the same when rotated a quarter turn) and that no three (or more) minarets lie on a line.



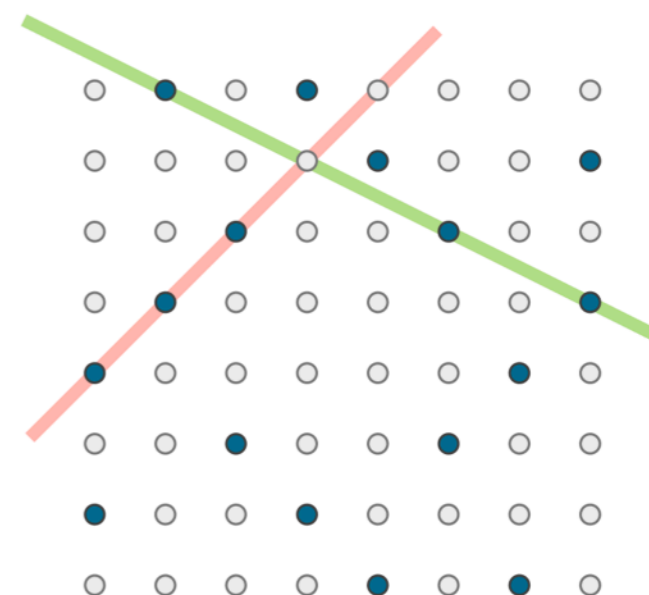
The city above is wrong because the red and green lines have three minarets.



Minarets of Fez

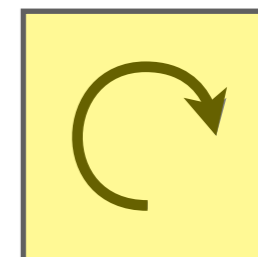


Many minarets have been built. Build more so that each row has two – making sure that Fez has rotational symmetry (looking the same when rotated a quarter turn) and that no three (or more) minarets lie on a line.

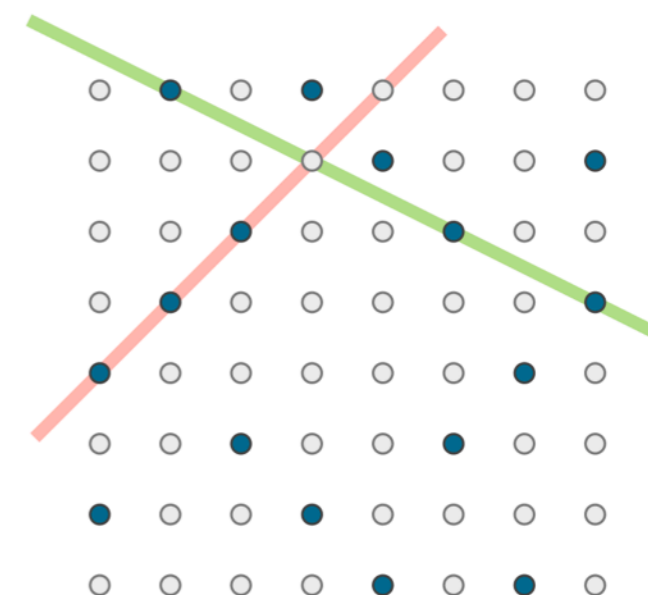


The city above is wrong because the red and green lines have three minarets.

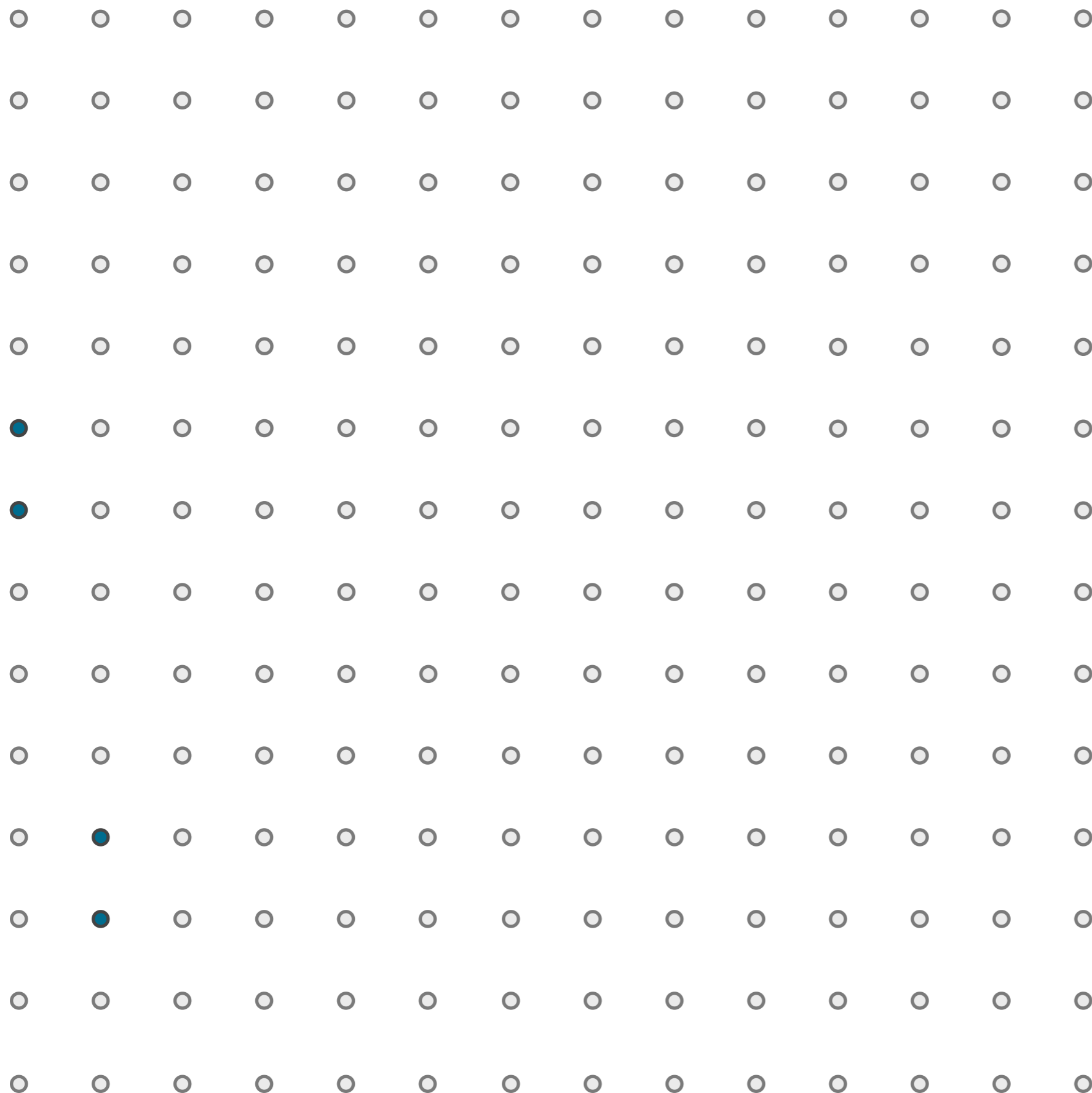
Minarets of Hyderabad

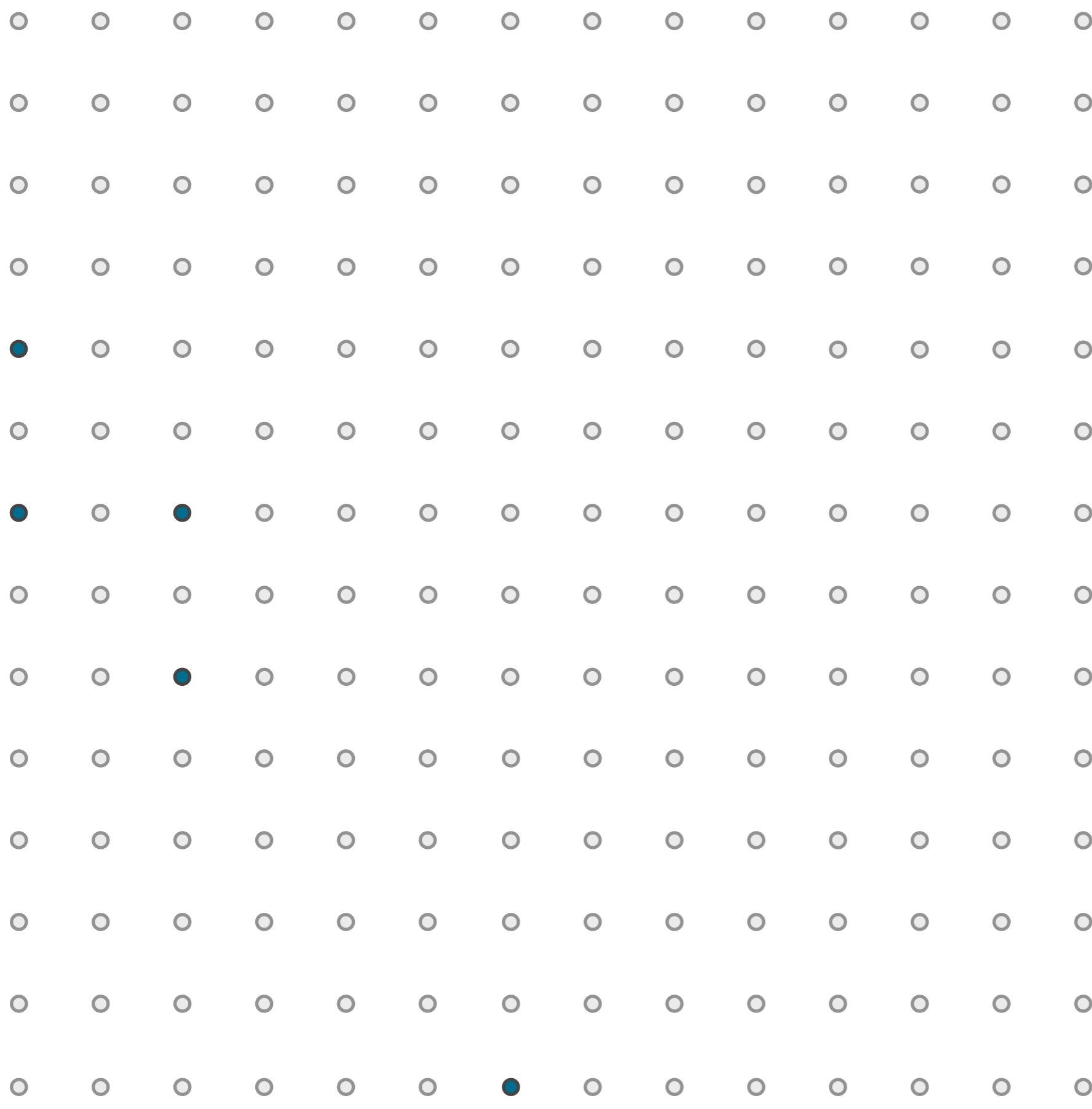


Only four minarets have been built. Build more so that each row has two - making sure that Hyderabad has rotational symmetry (looking the same when rotated a quarter turn) and that no three (or more) minarets lie on a line.

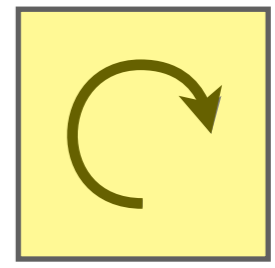


The city above is wrong because the red and green lines have three minarets.

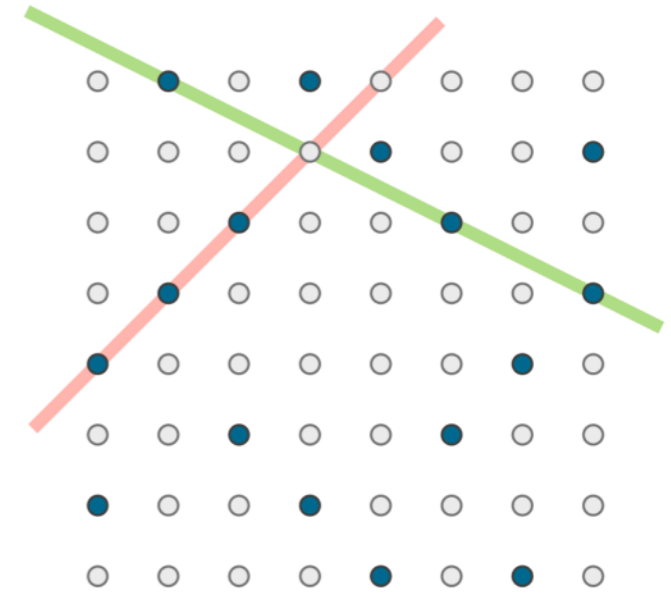




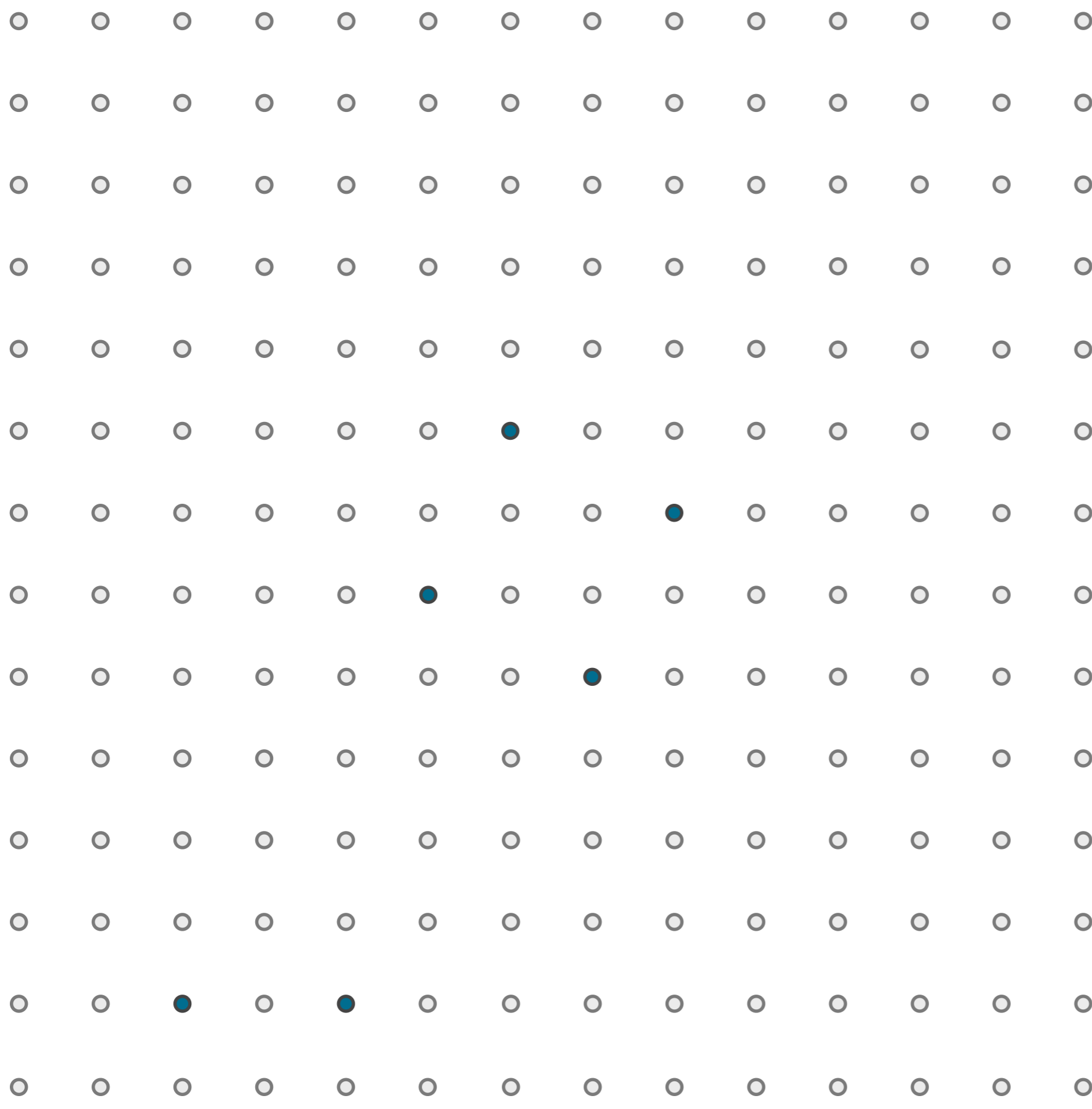
Minarets of Riyadh



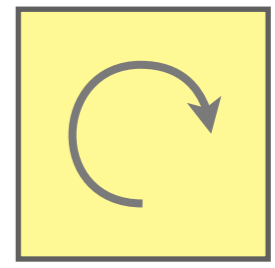
Only five minarets have been built. Build more so that each row has two - making sure that Riyadh has rotational symmetry (looking the same when rotated a quarter turn) and that no three (or more) minarets lie on a line.



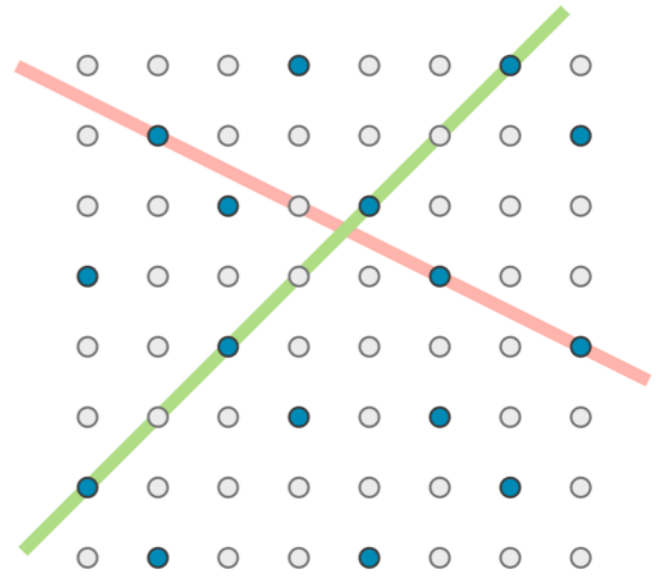
The city above is wrong because the red and green lines have three minarets.



Minarets of Lahore



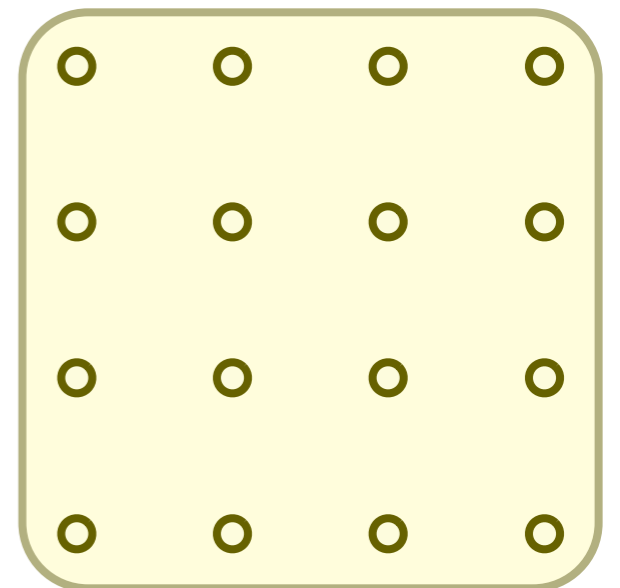
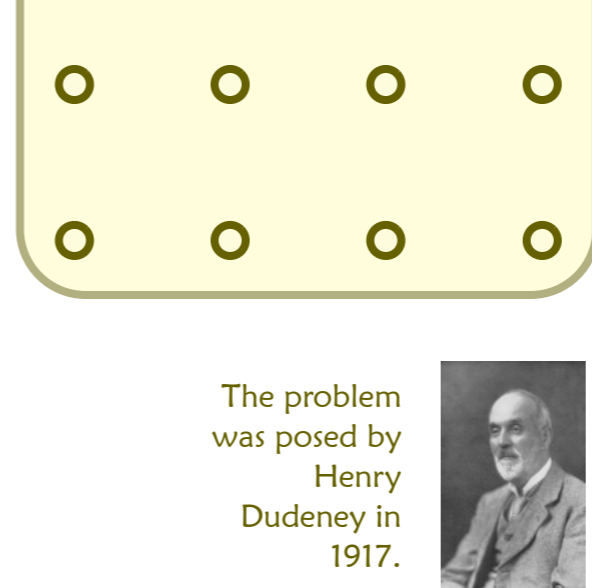
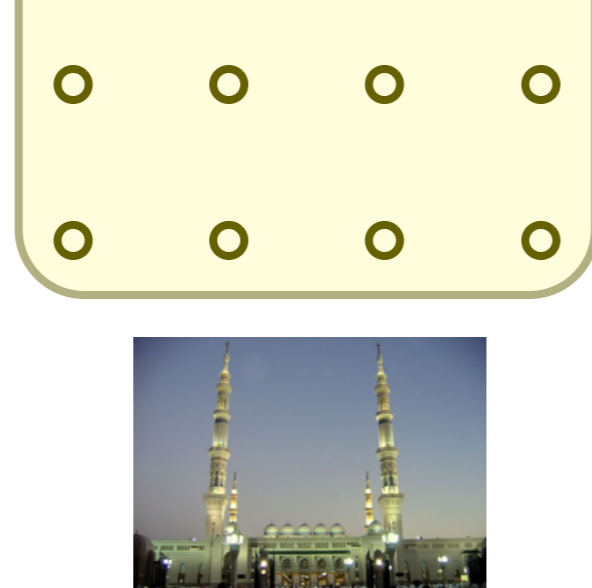
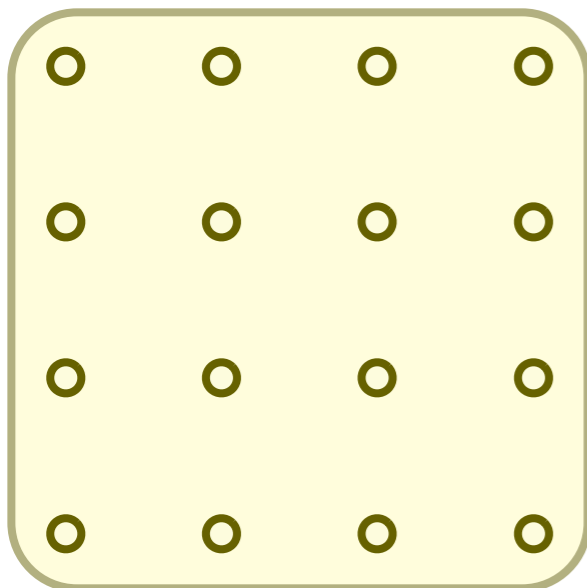
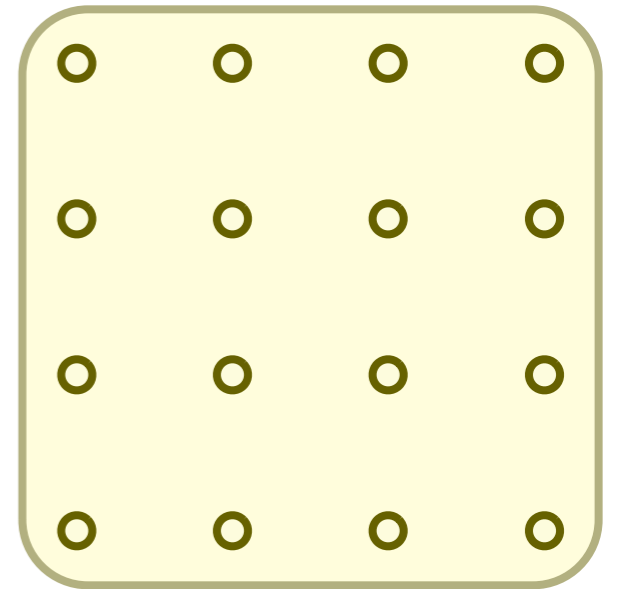
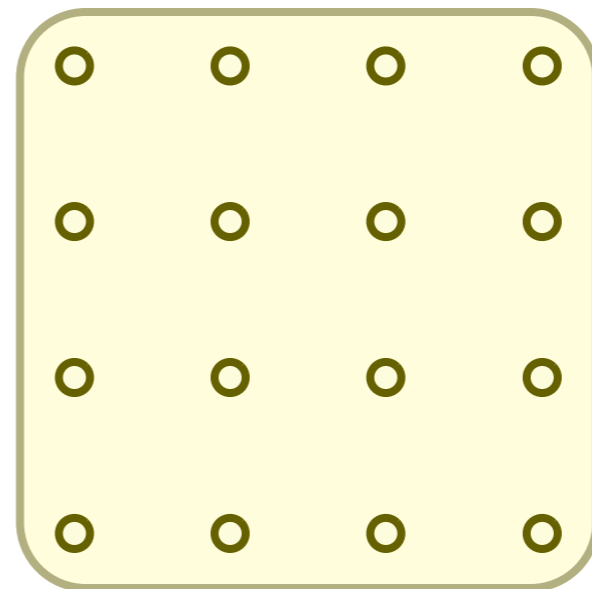
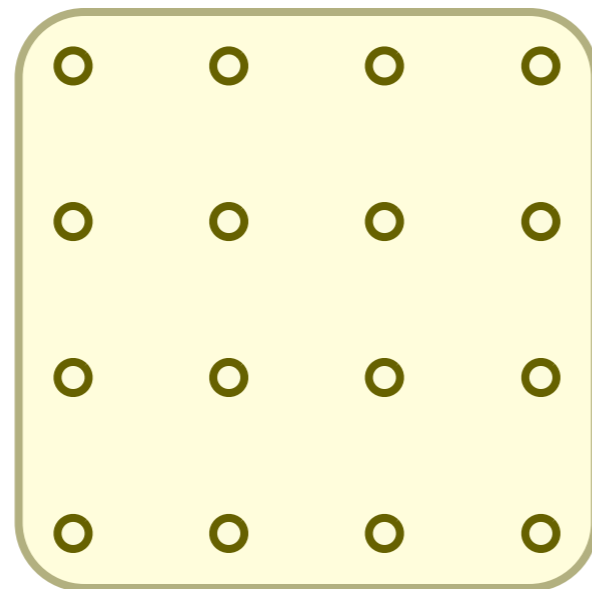
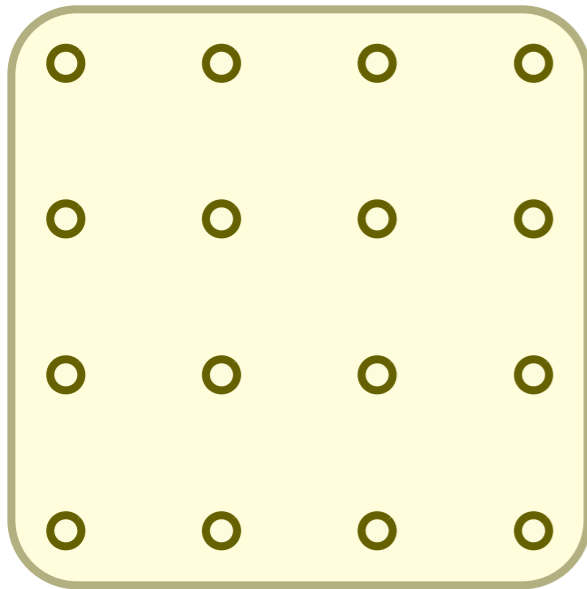
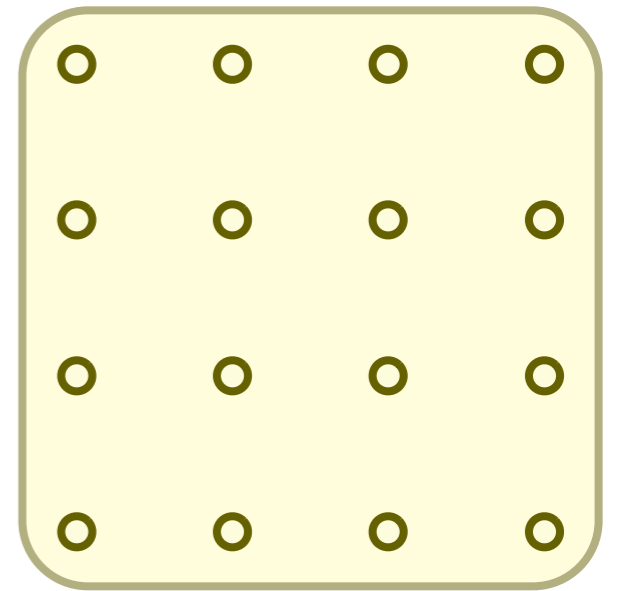
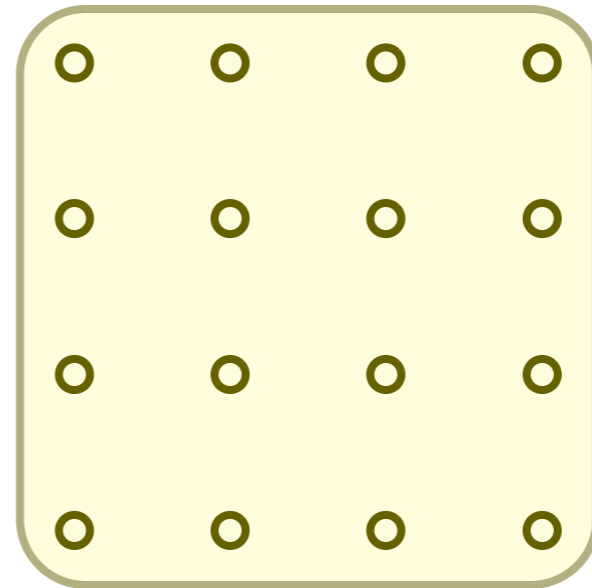
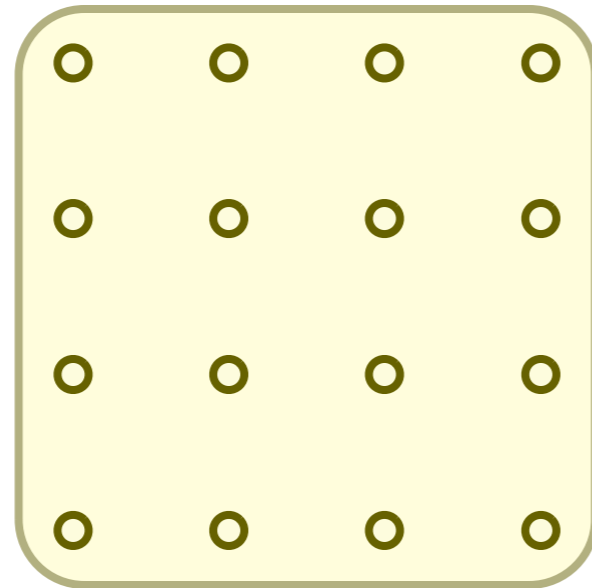
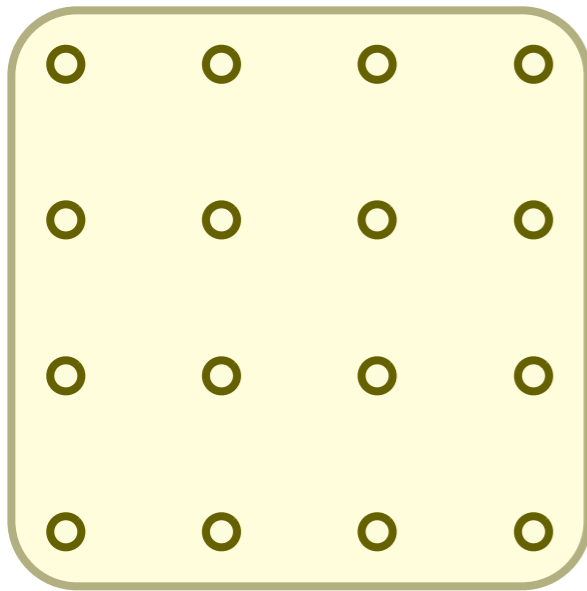
Here are 4 minarets. Build so that each row has two - making sure that the city has rotational symmetry (looking the same when rotated a quarter turn) and that no three minarets lie on a line



The city above is wrong because the red line has three minarets. It is also wrong because the green line has more than three.

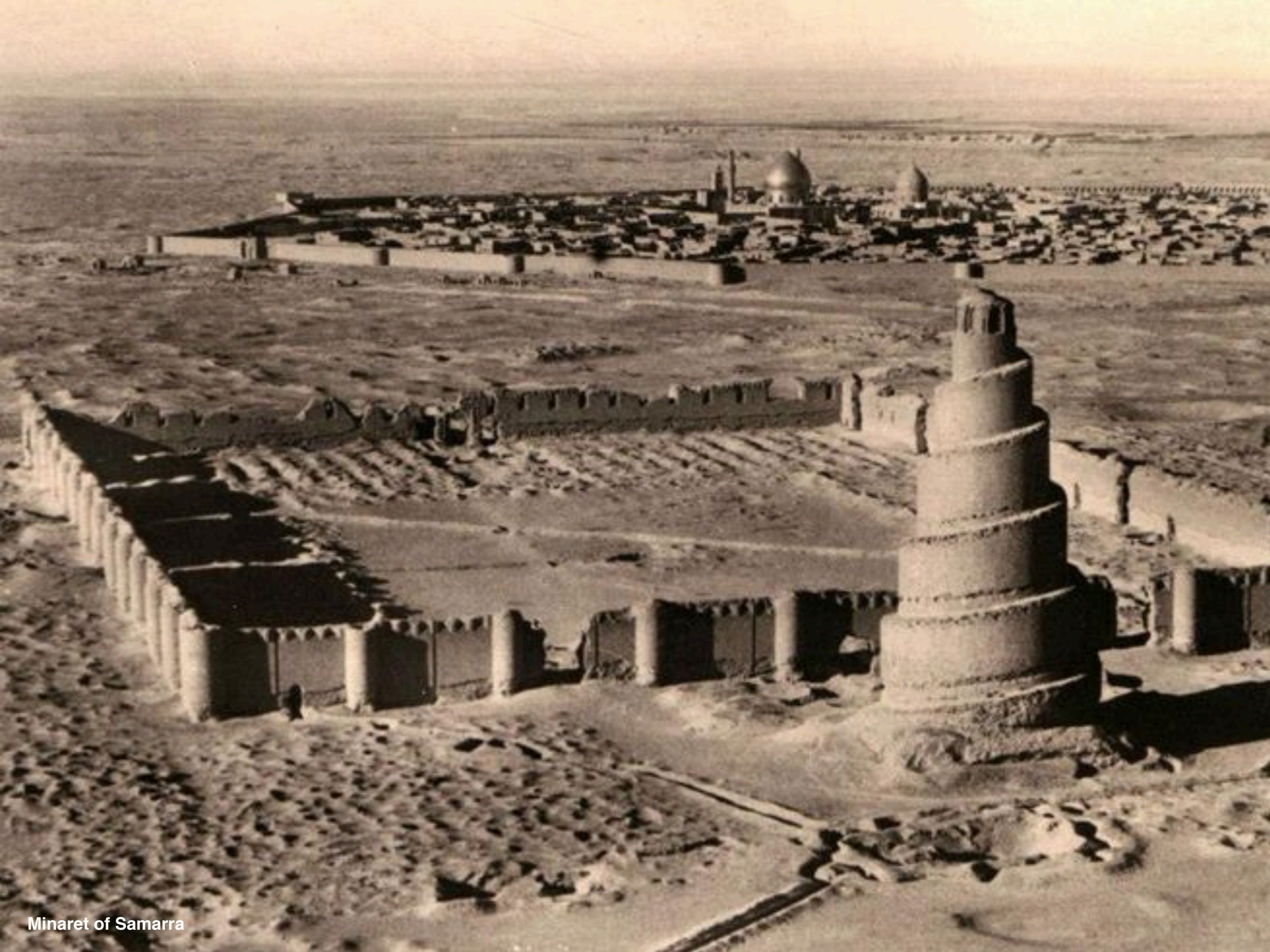
Minarets of Medina

Build 8 minarets so that no three lie on a line... any line... horizontal, vertical, or angled. There are four types of solution.



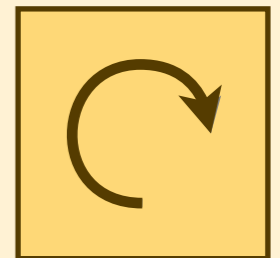
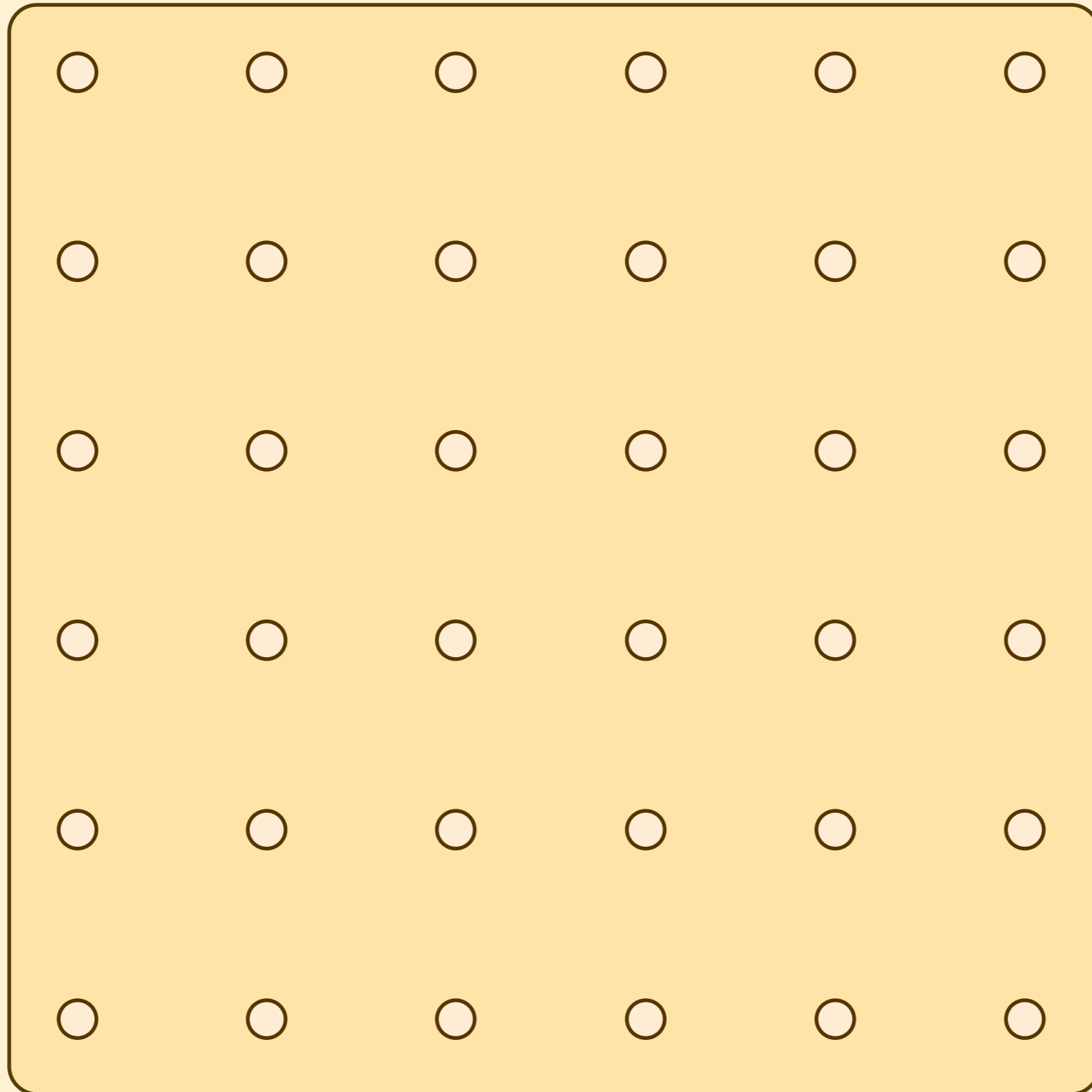
The problem was posed by Henry Dudeney in 1917.



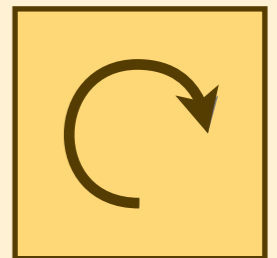
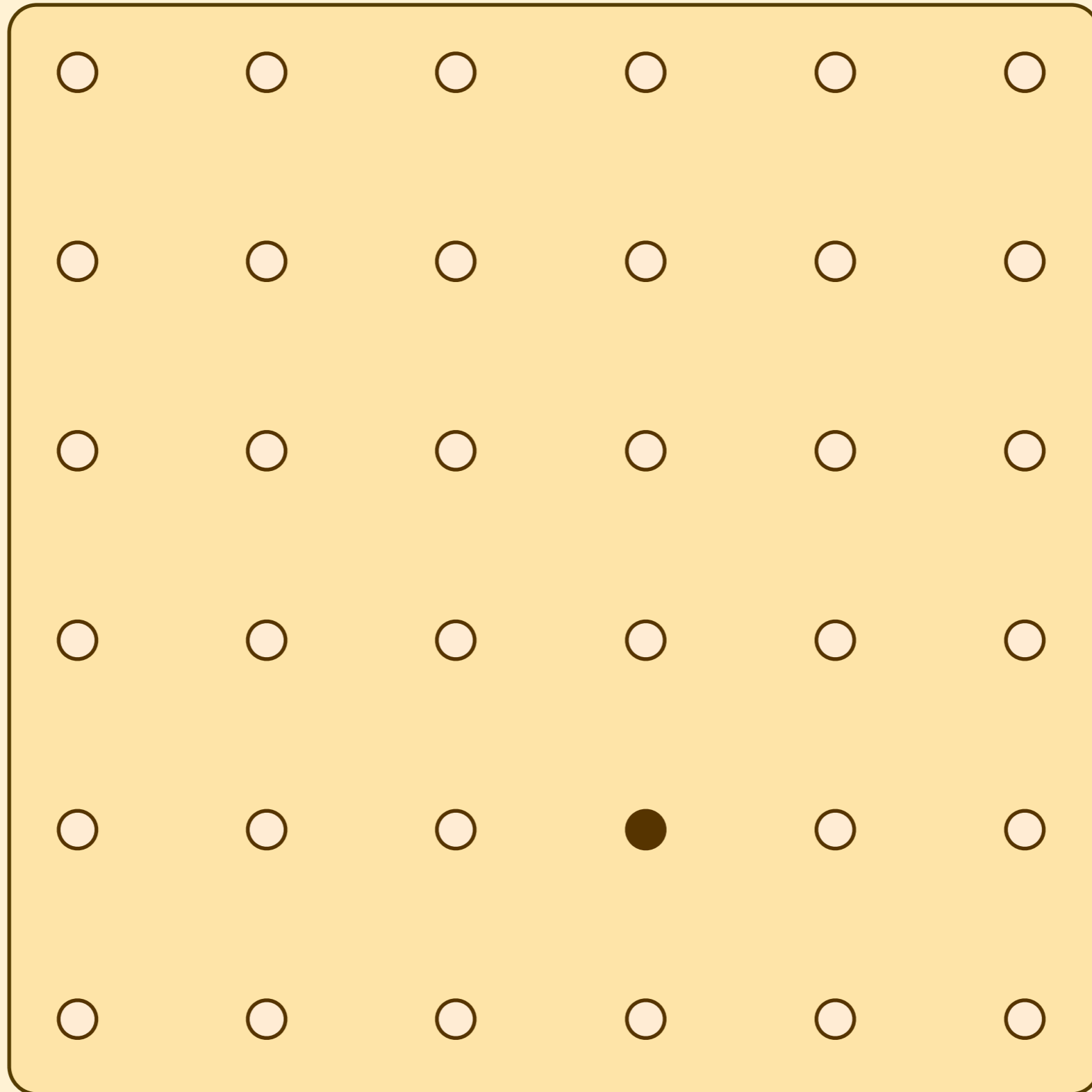


Minaret of Samarra

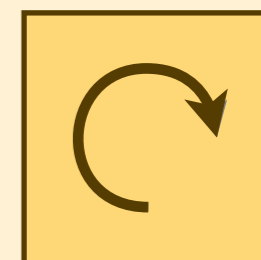
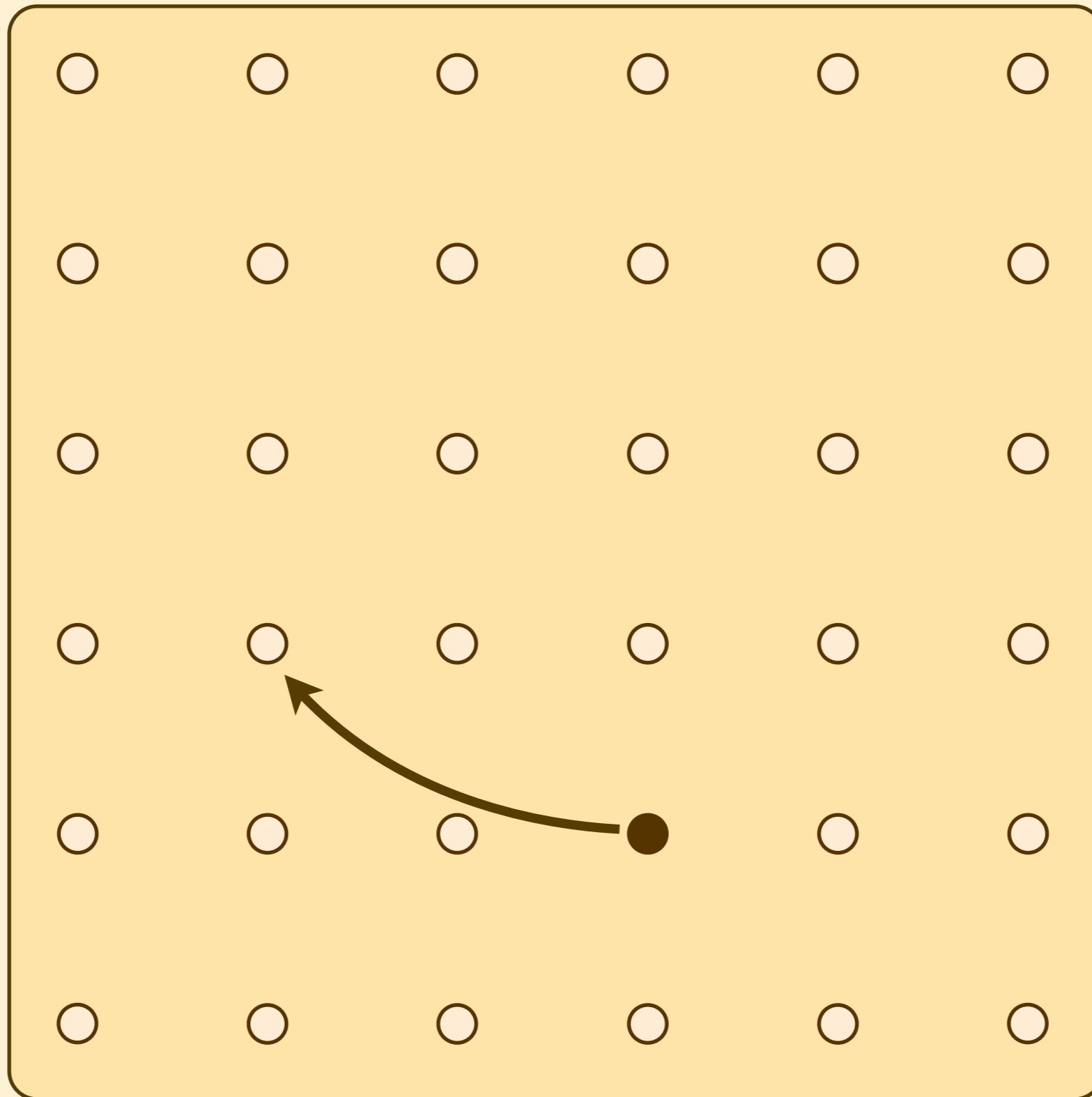
Minarets of Samarra



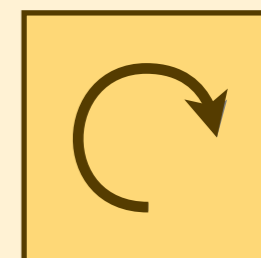
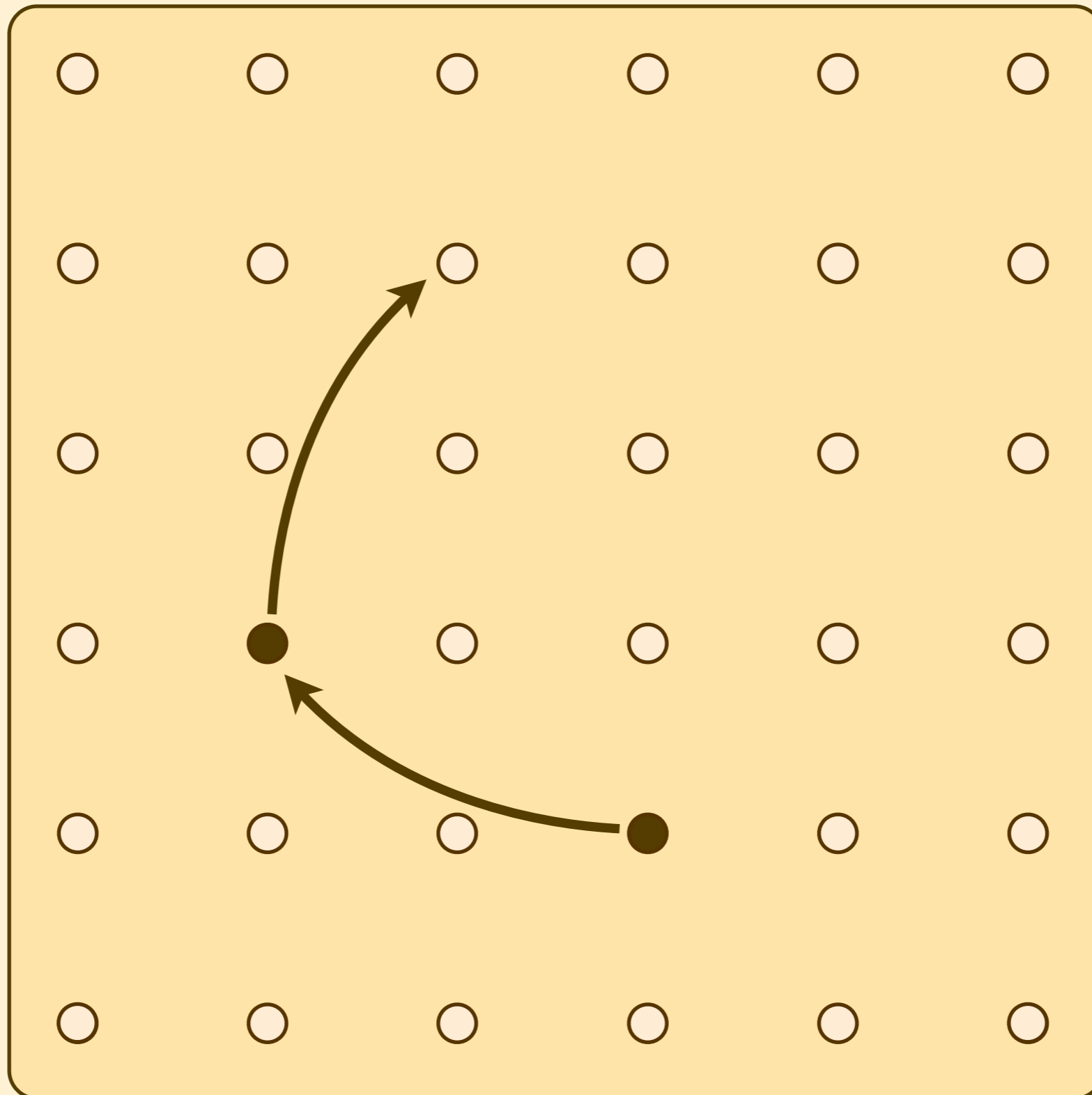
Minarets of Samarra



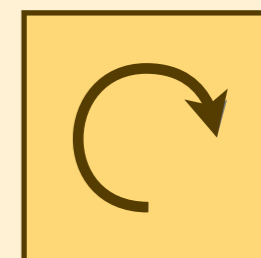
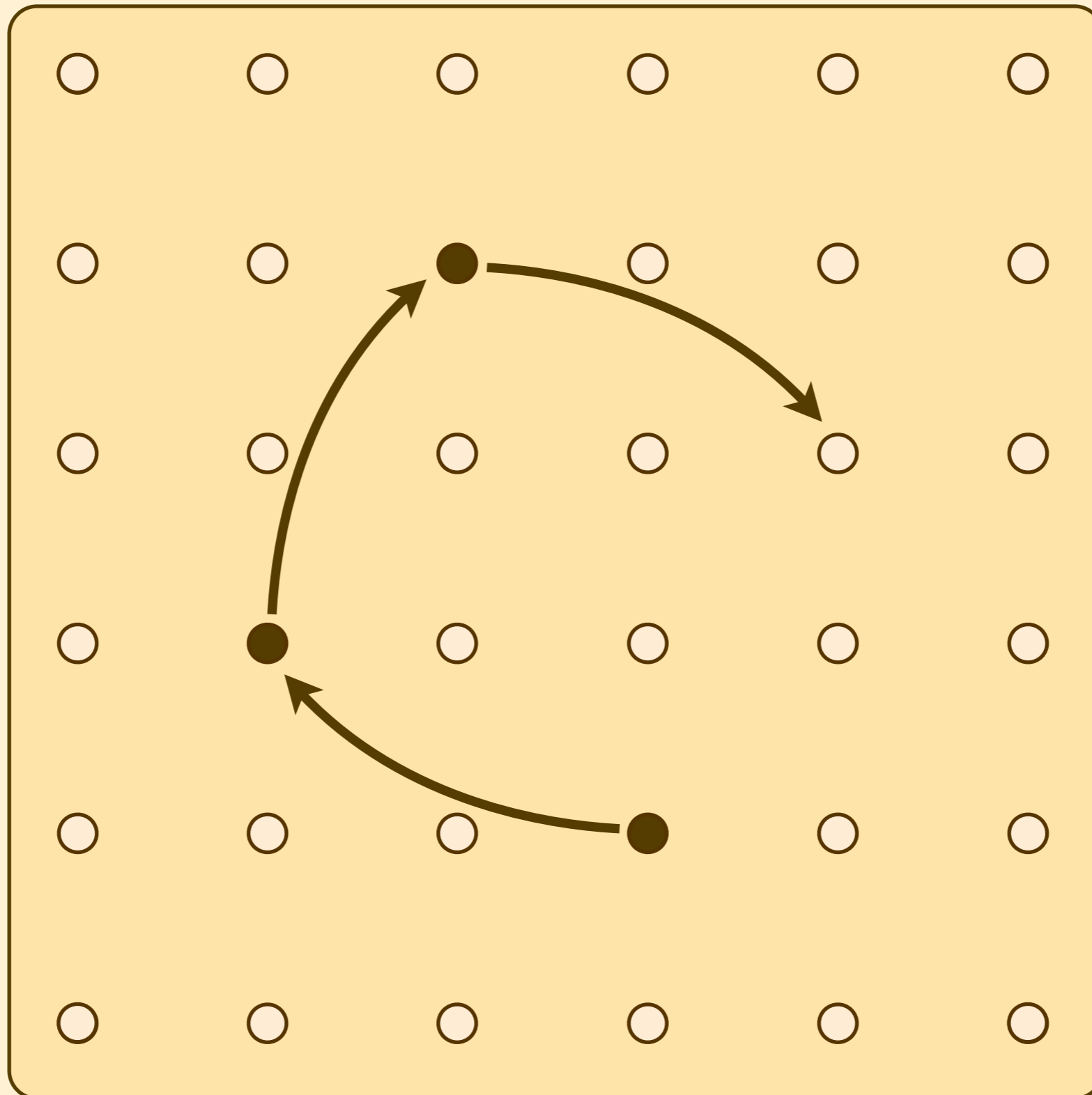
Minarets of Samarra



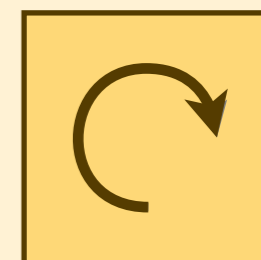
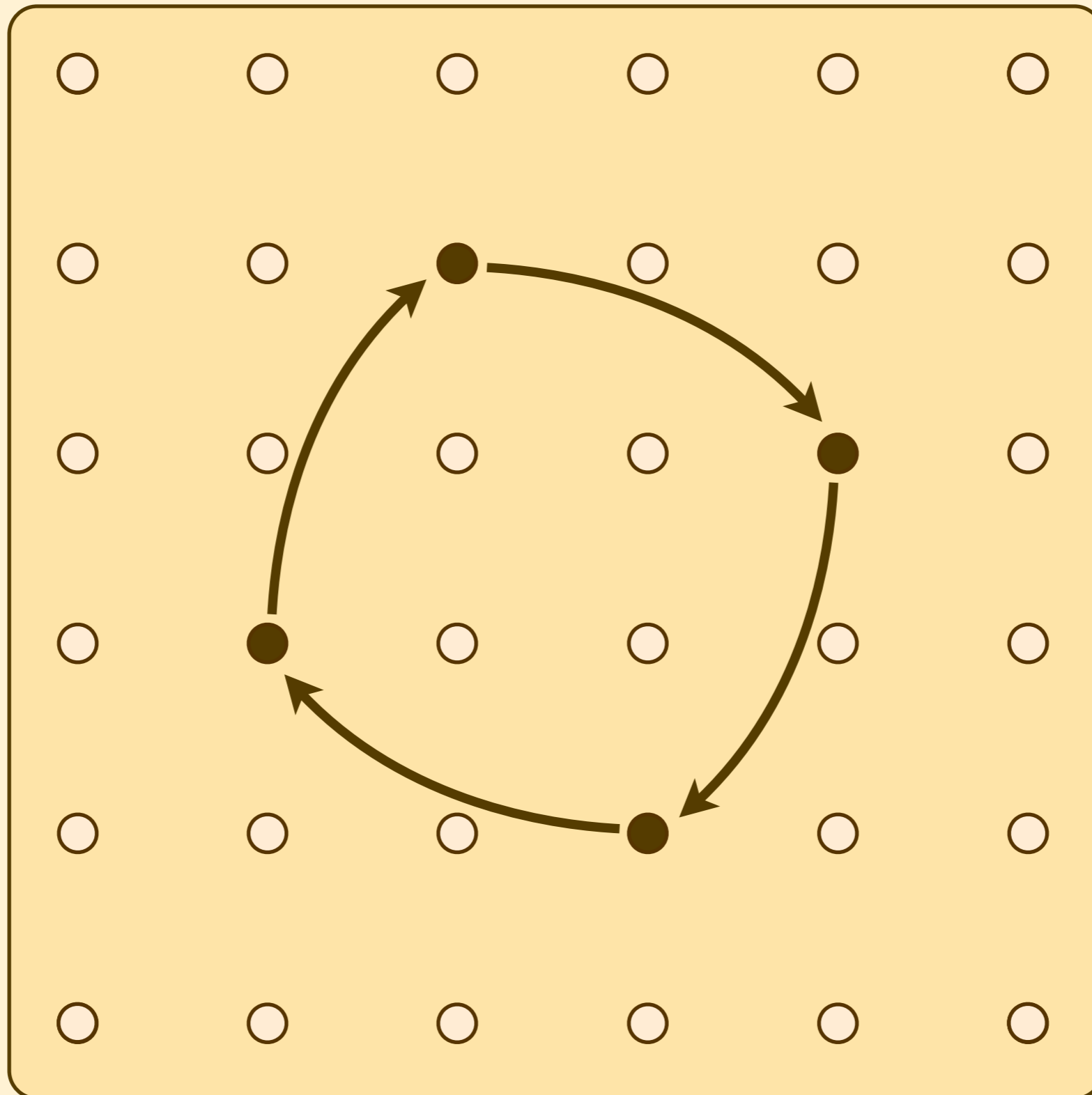
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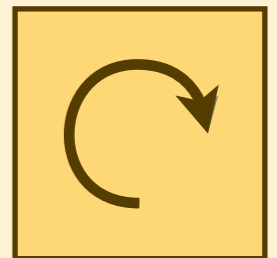
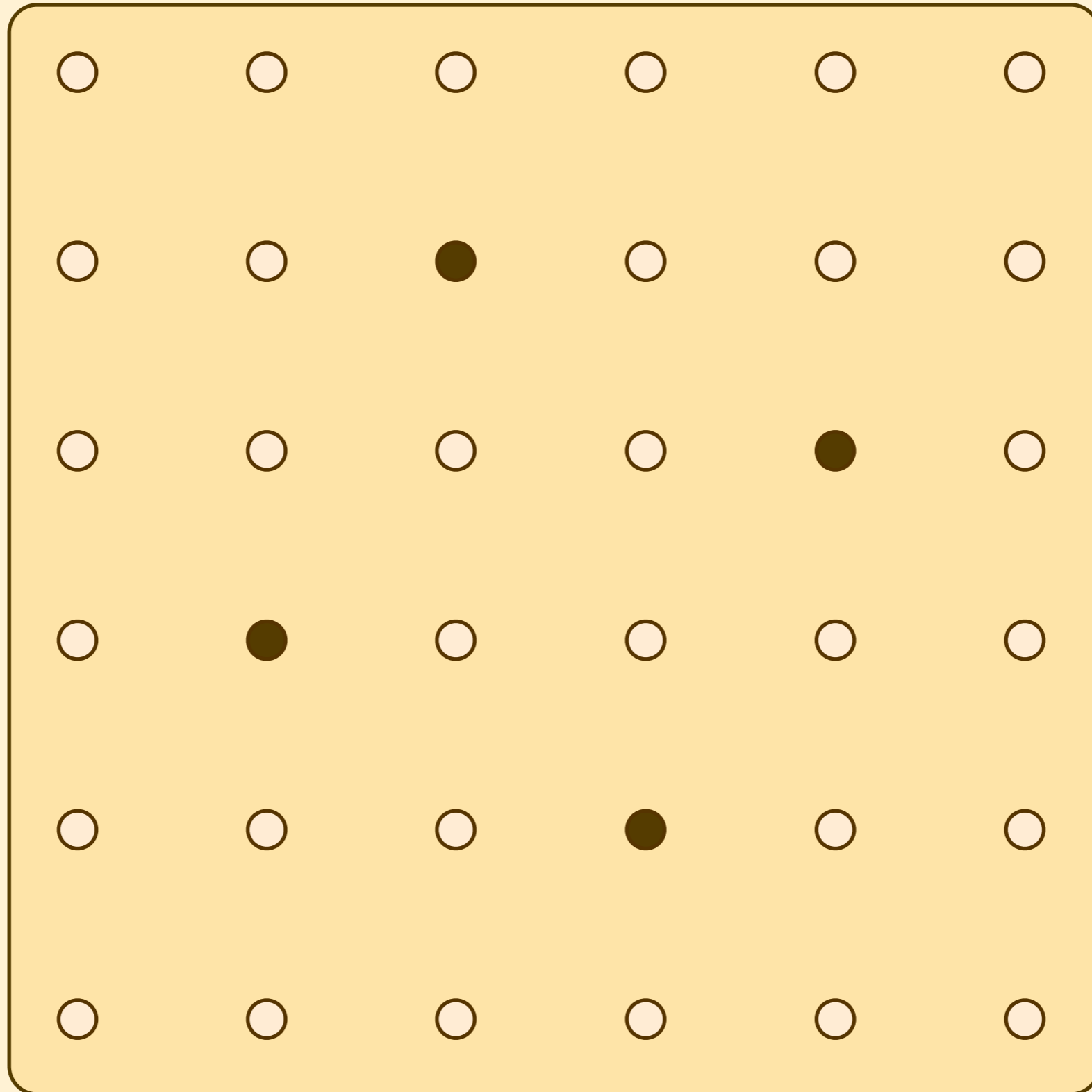
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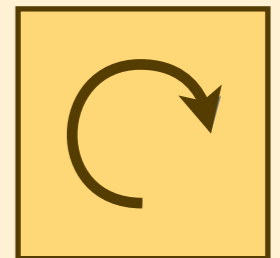
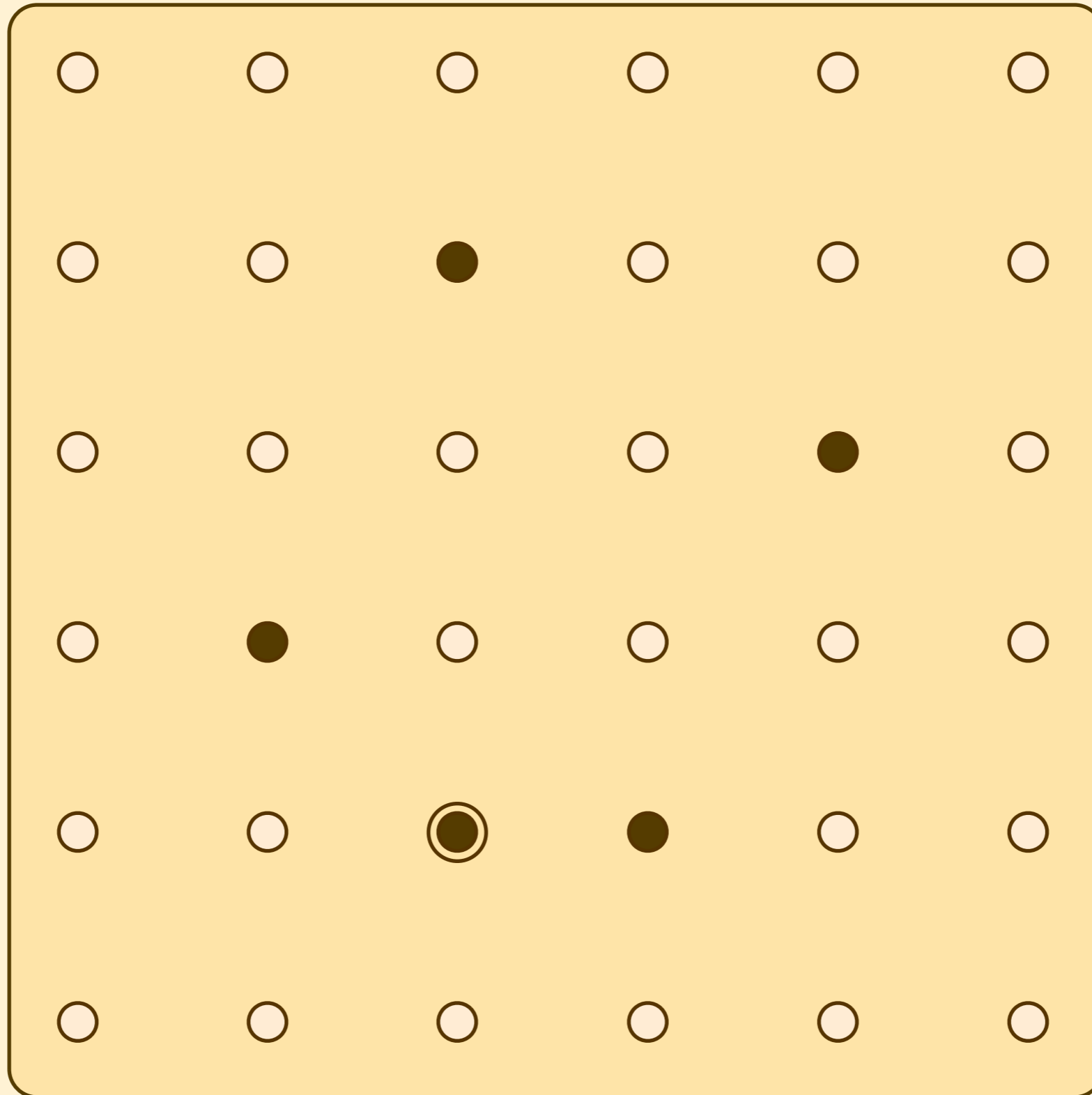
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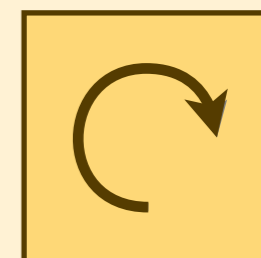
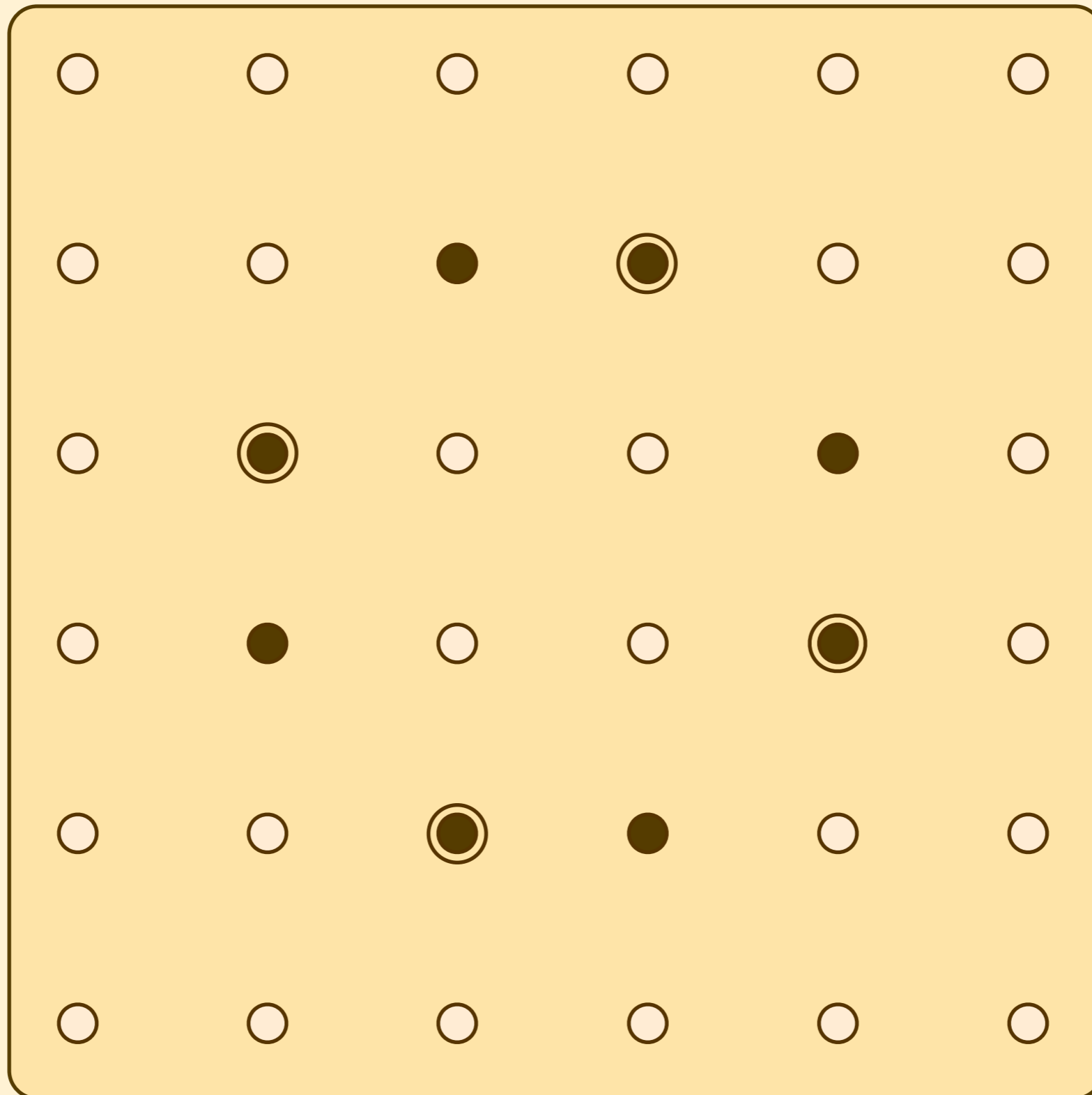
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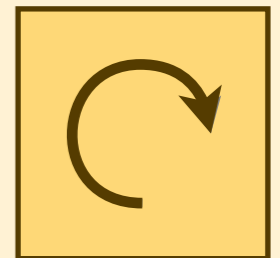
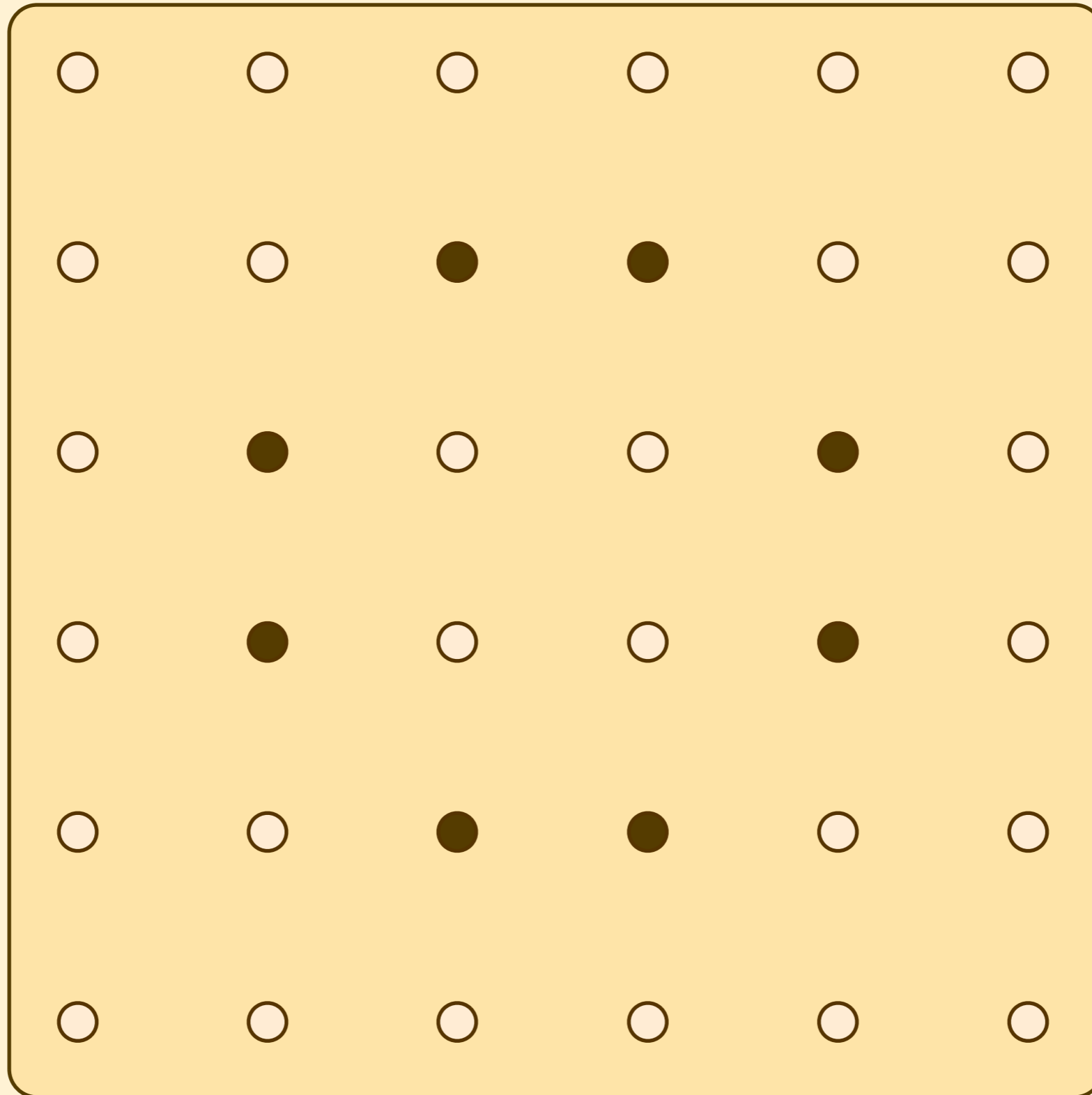
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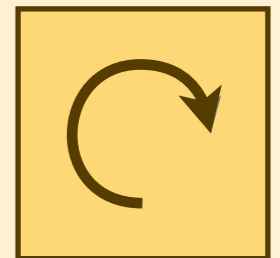
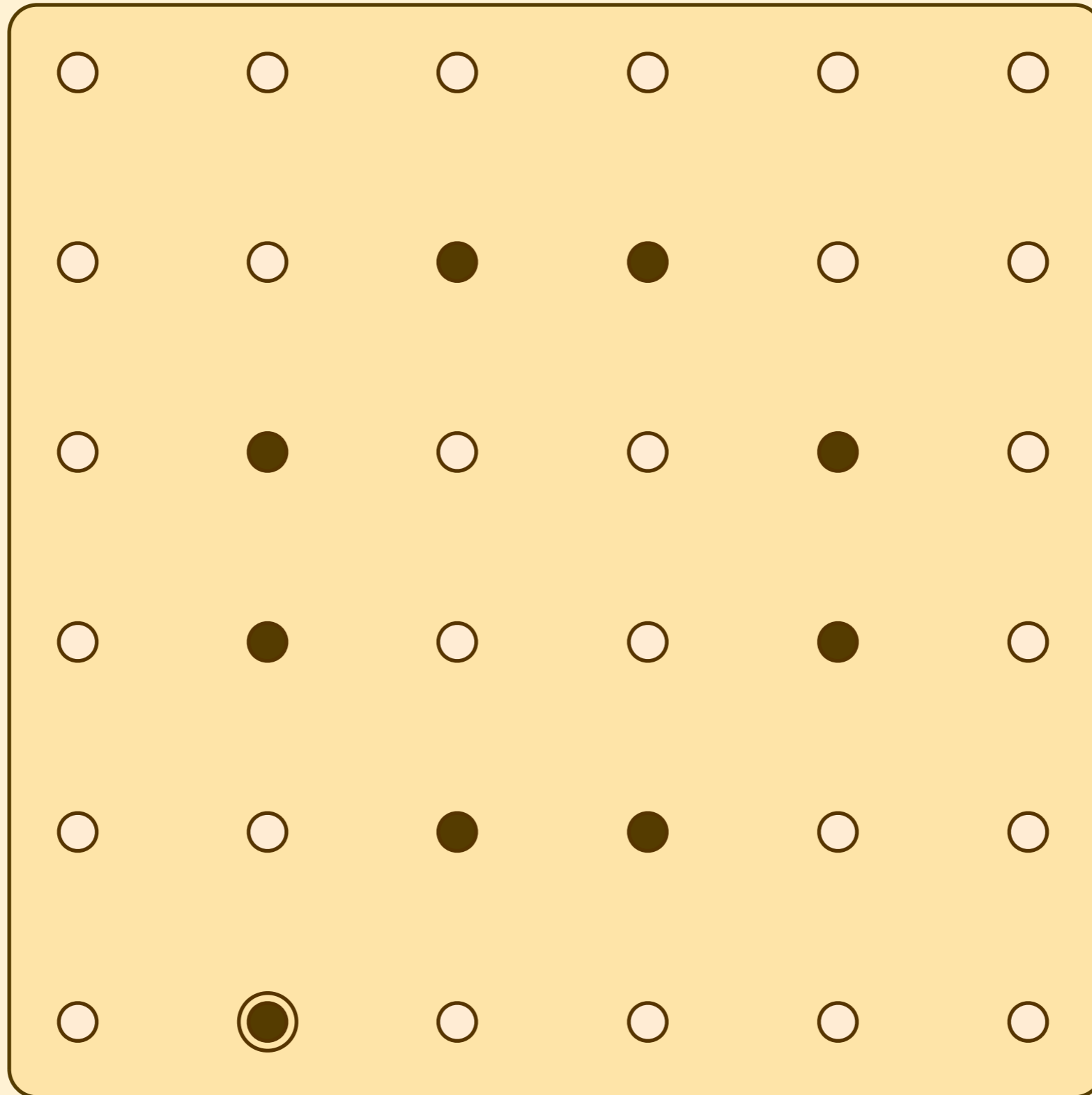
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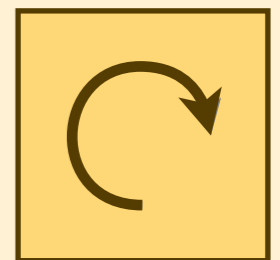
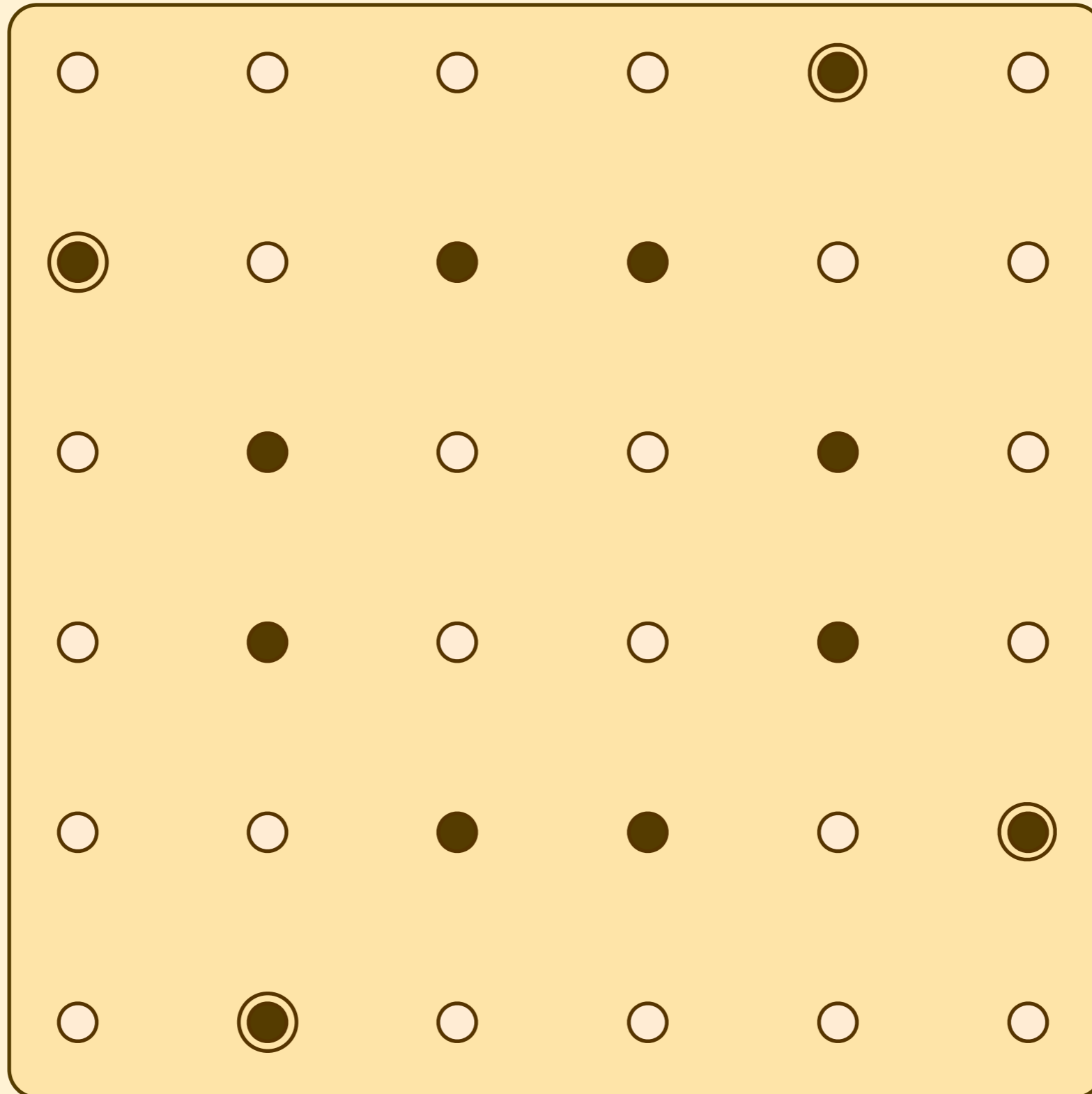
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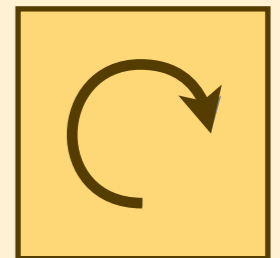
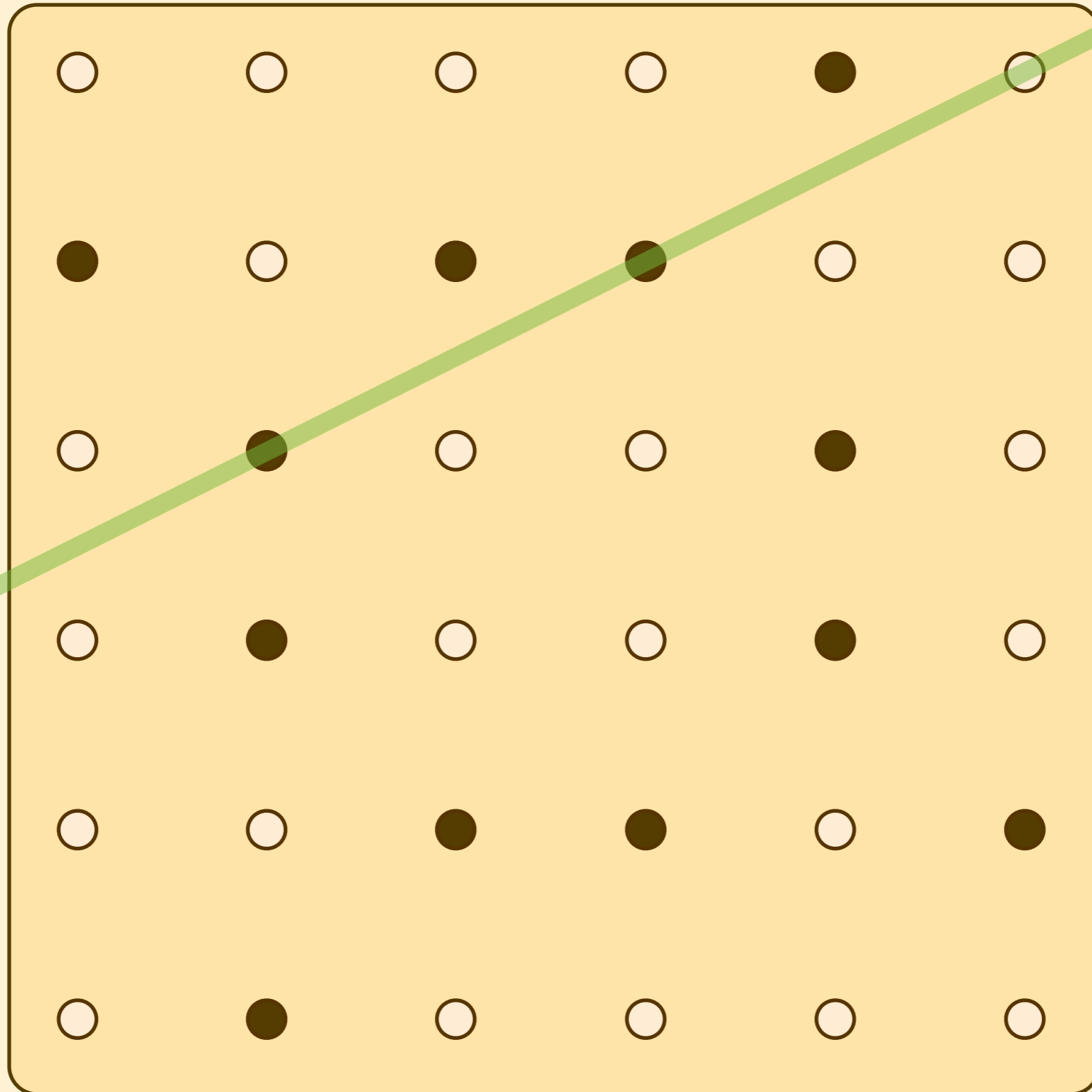
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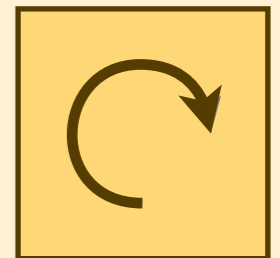
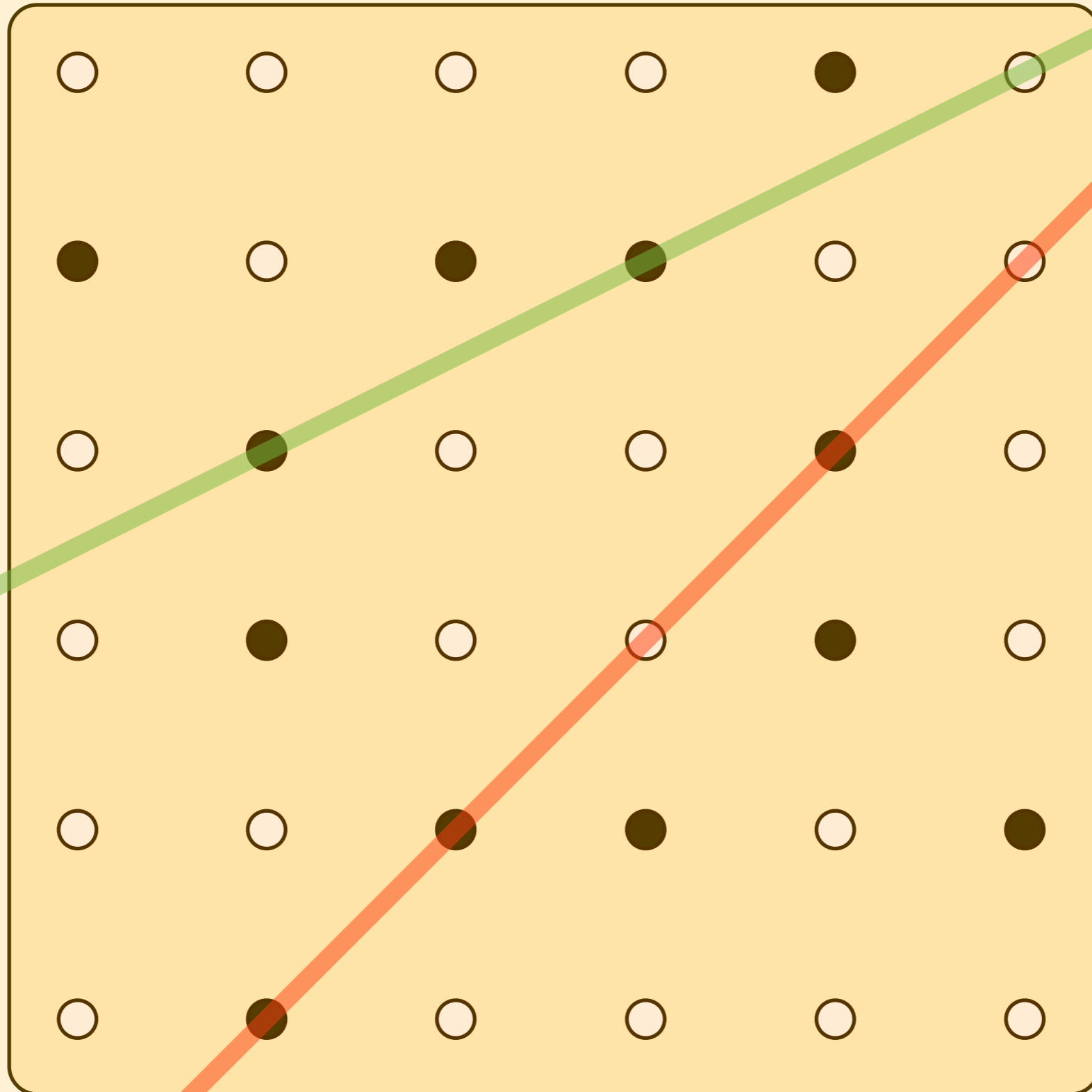
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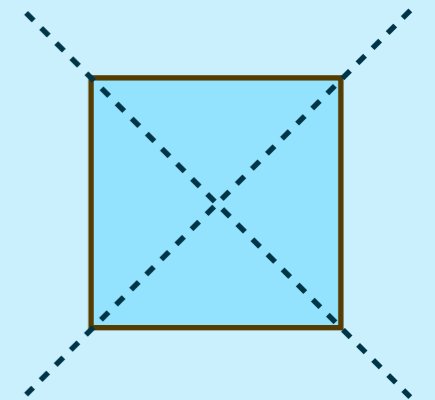
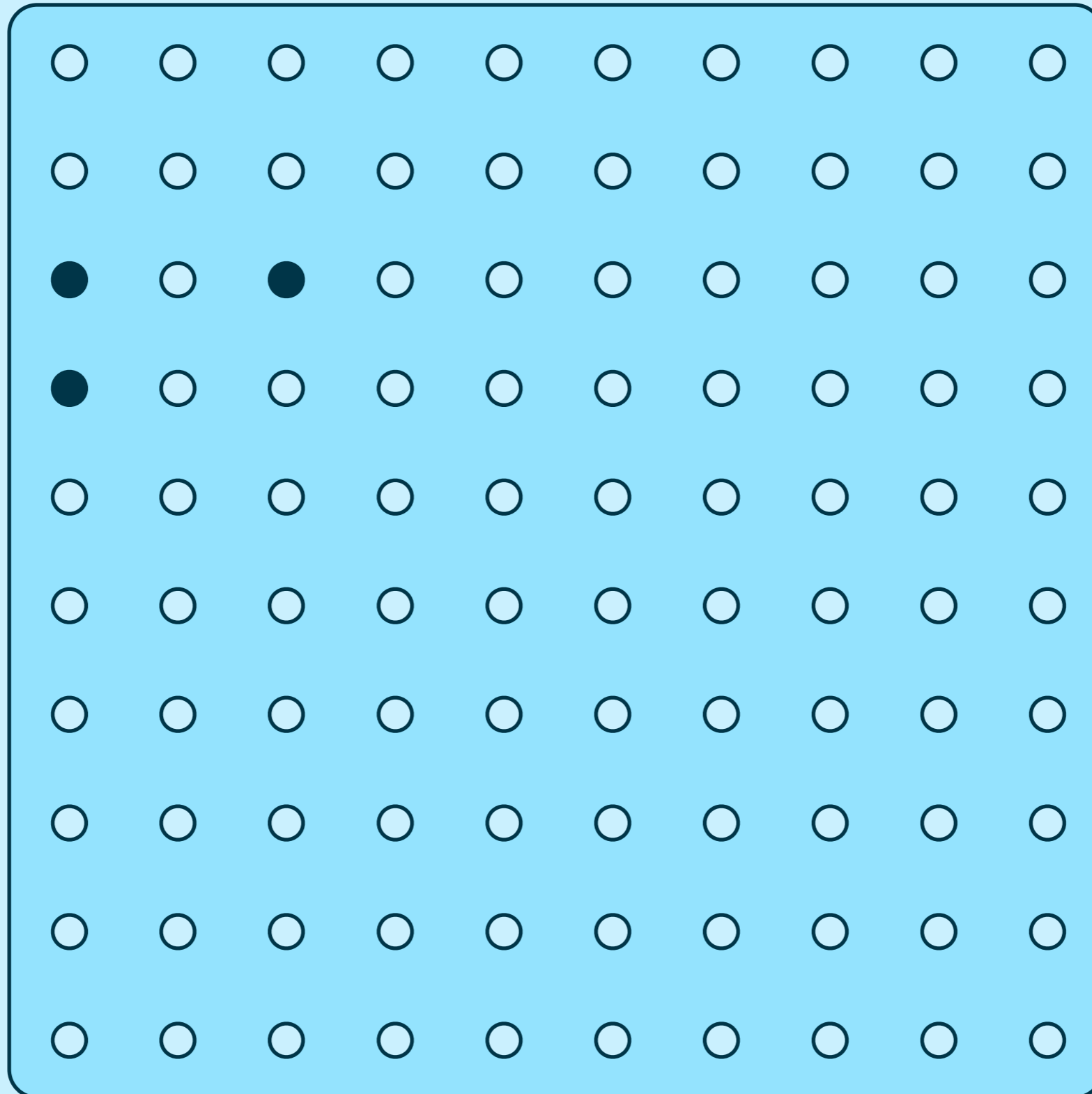
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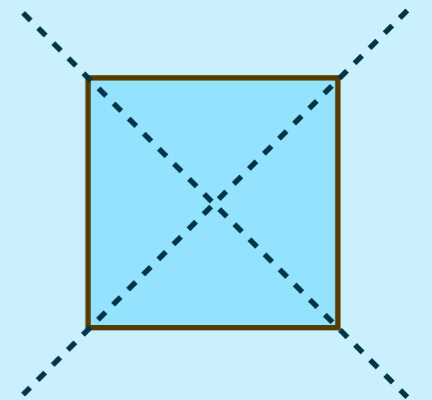
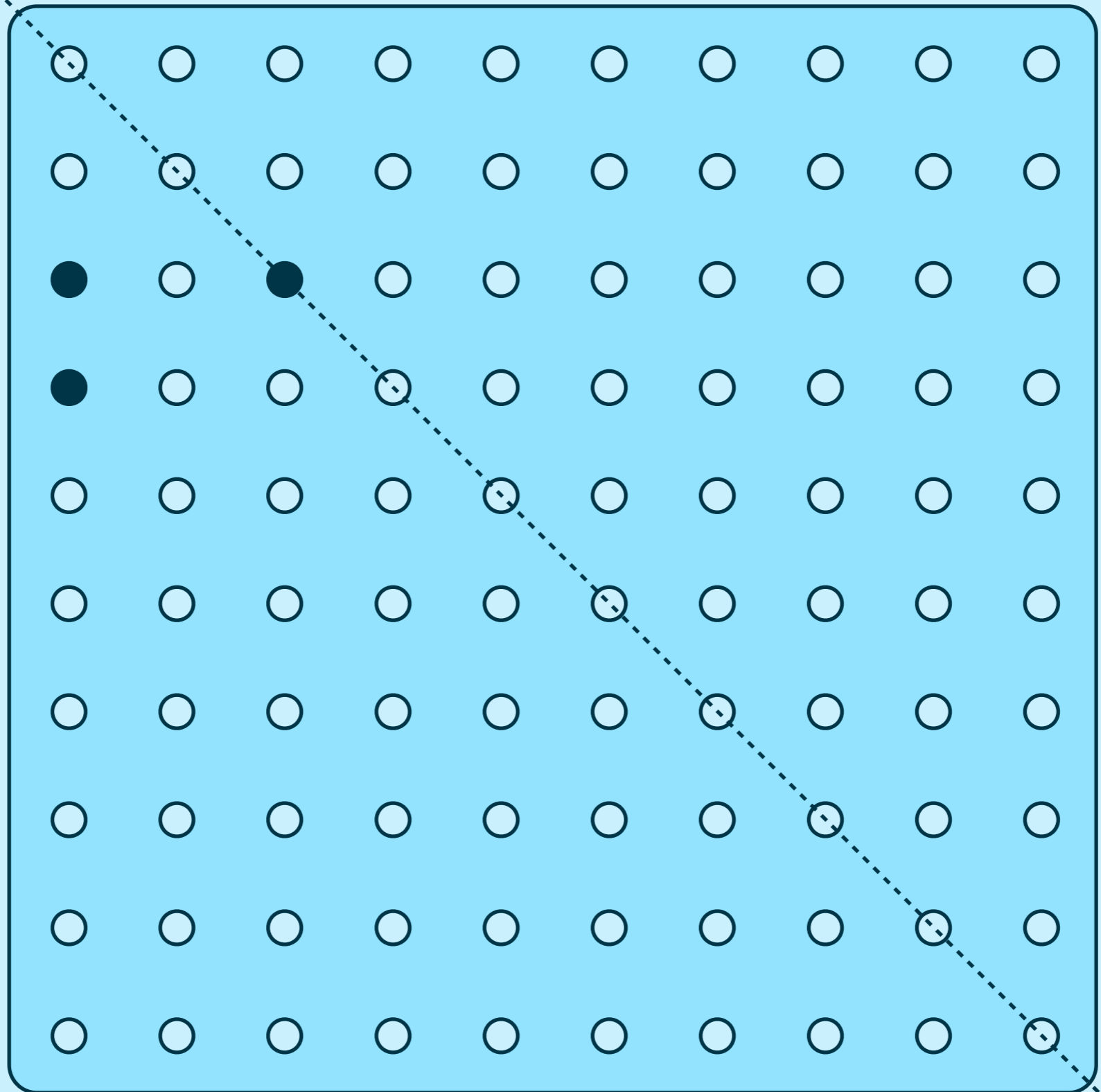


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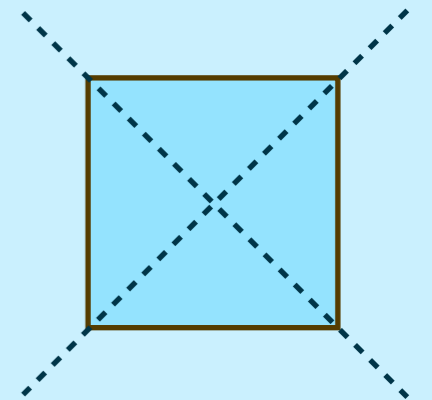
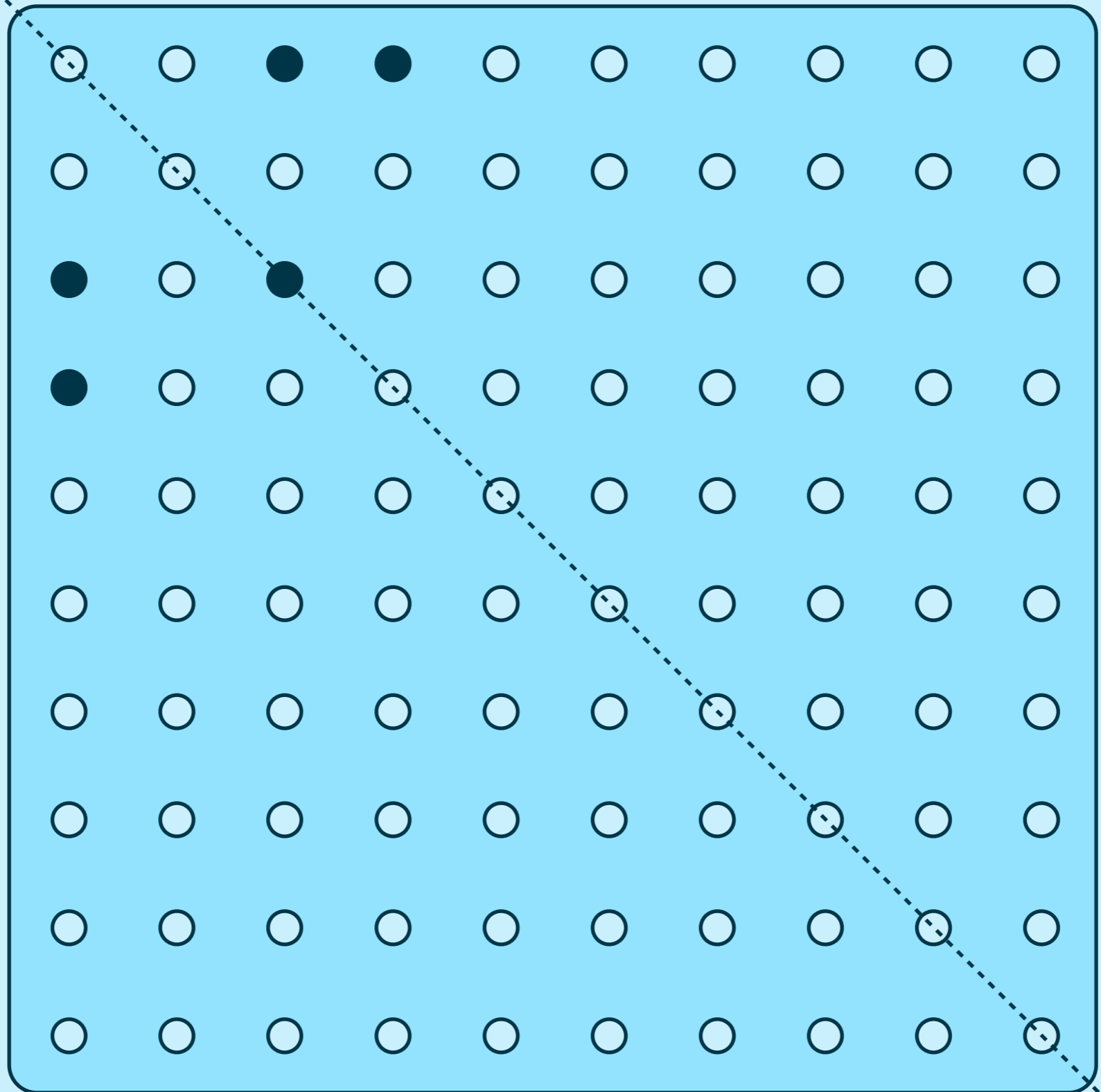
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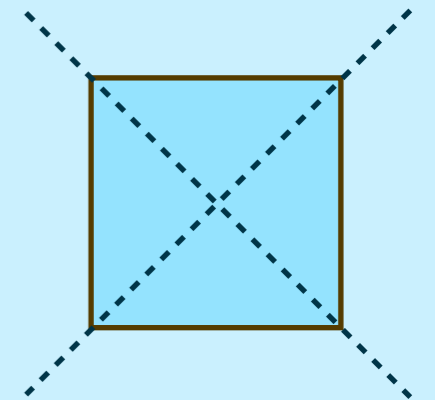
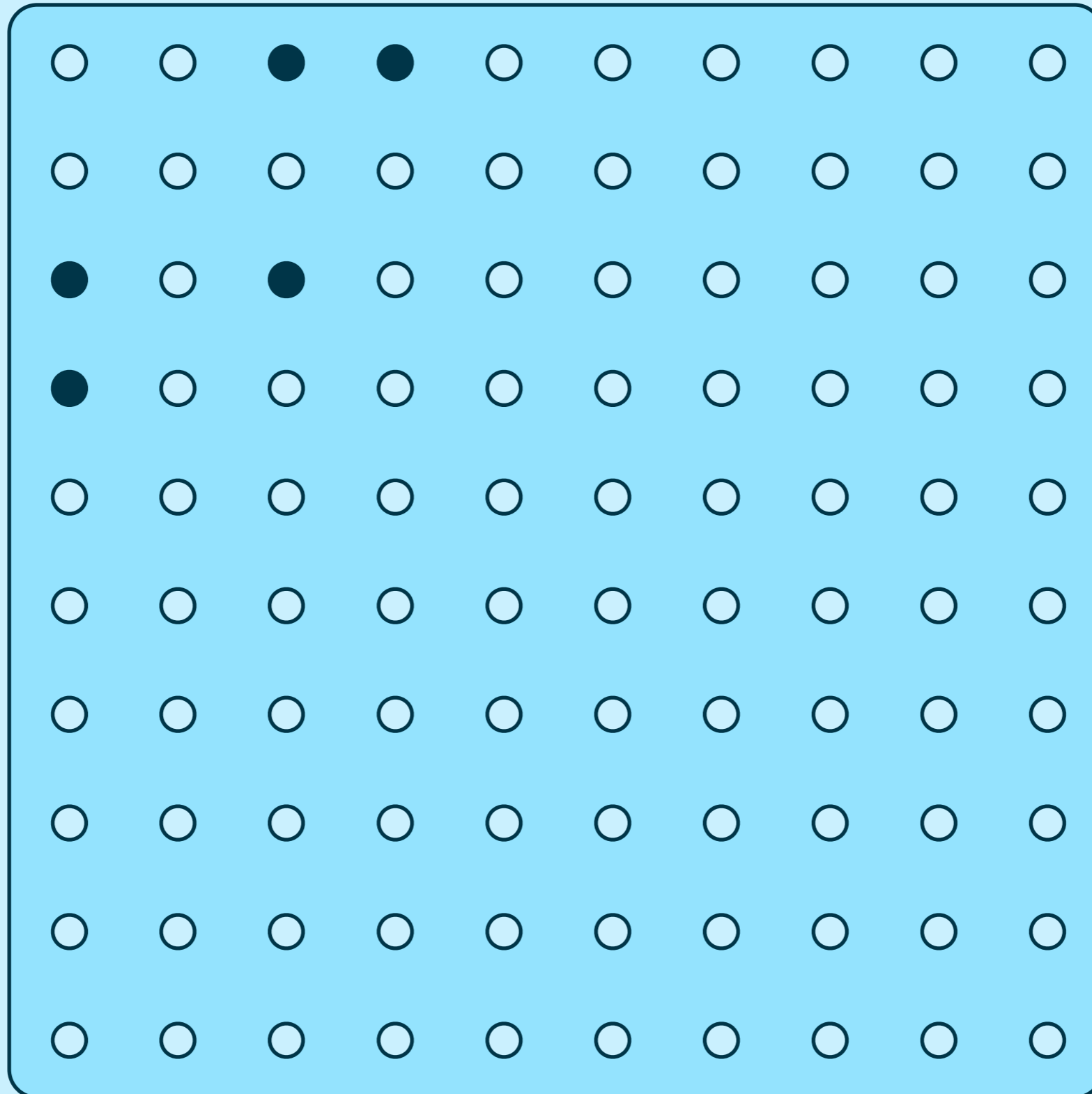
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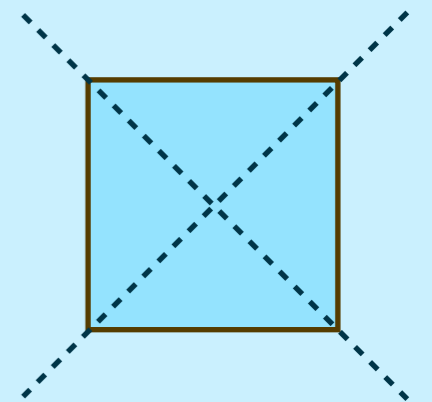
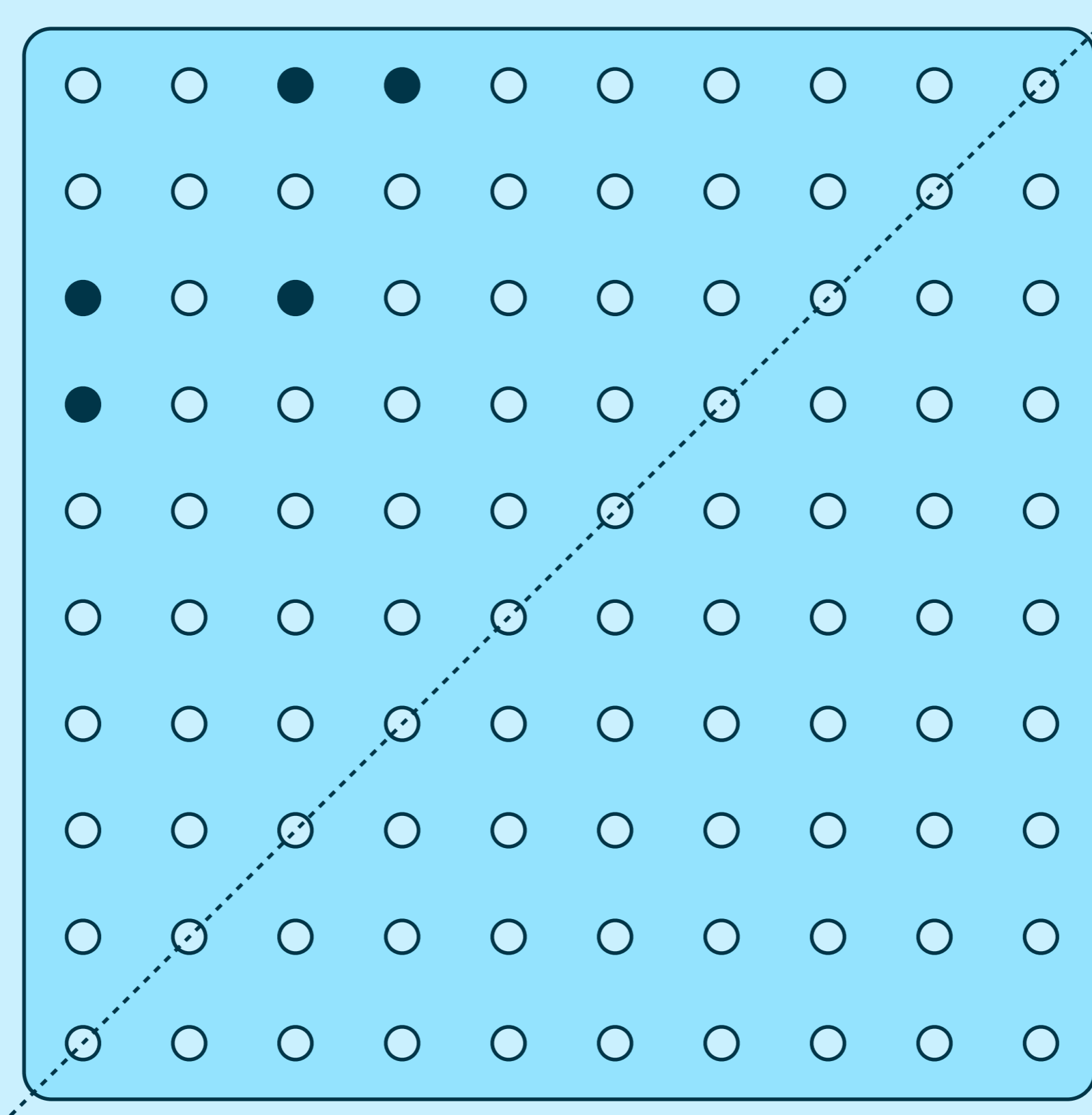
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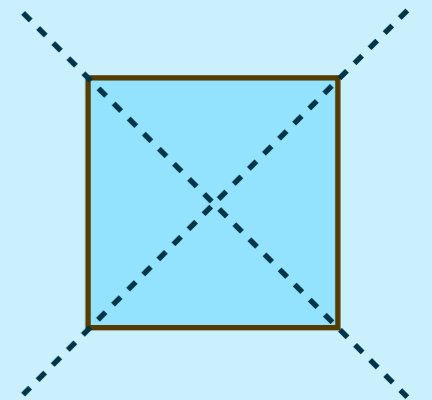
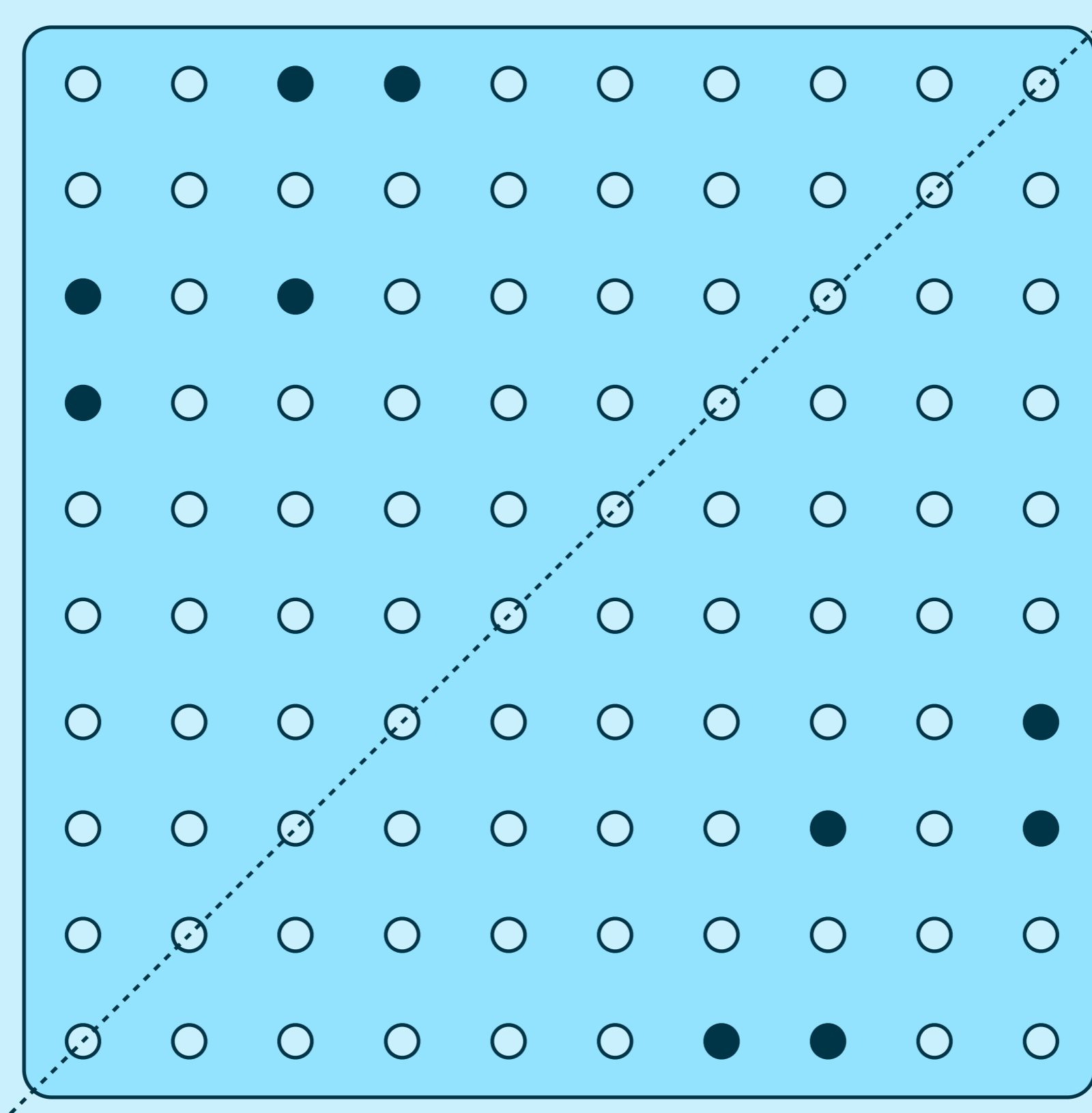
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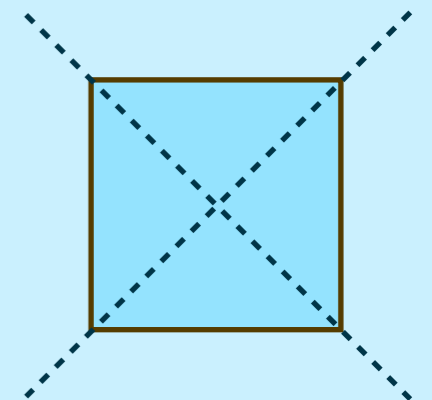
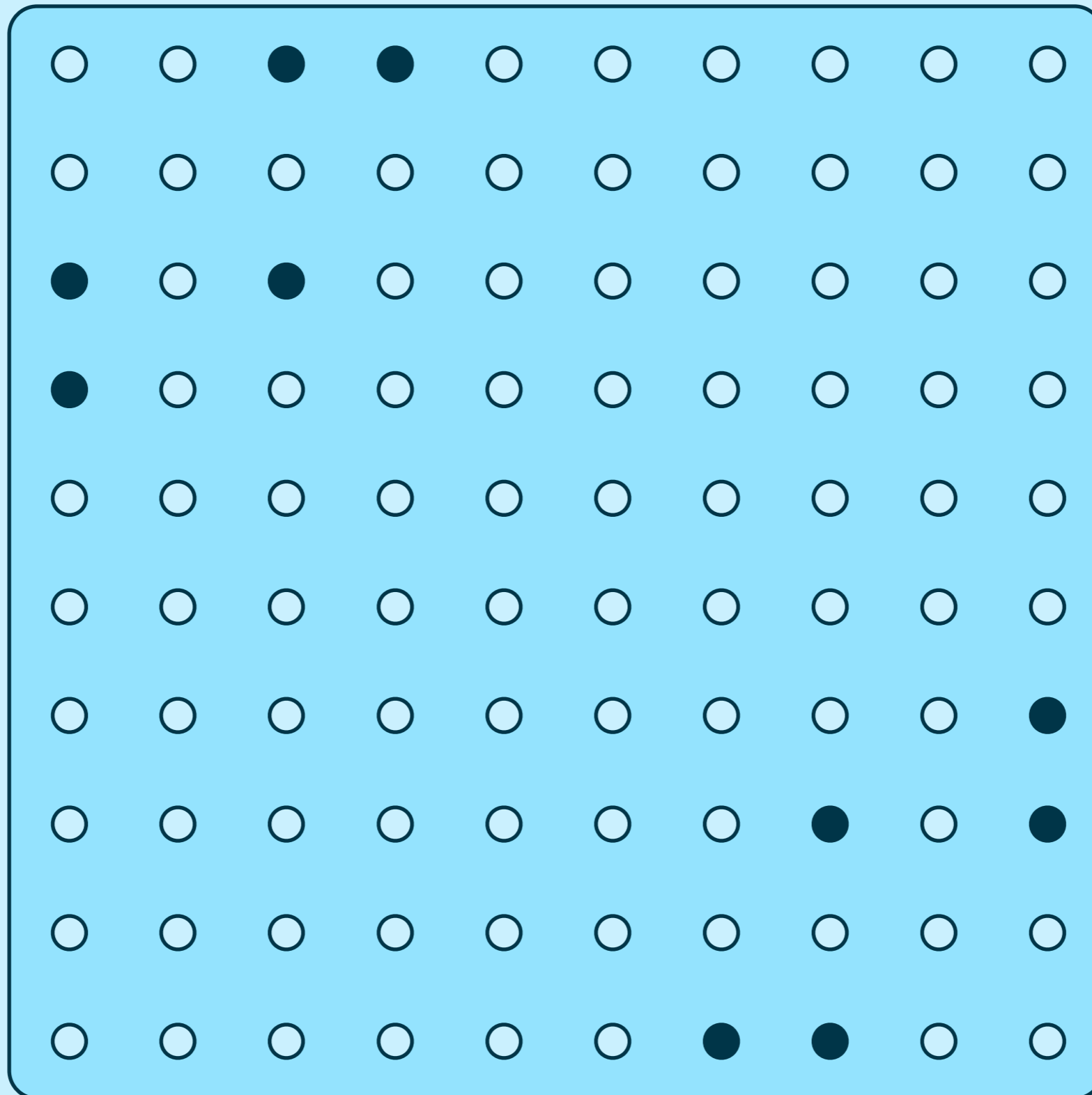
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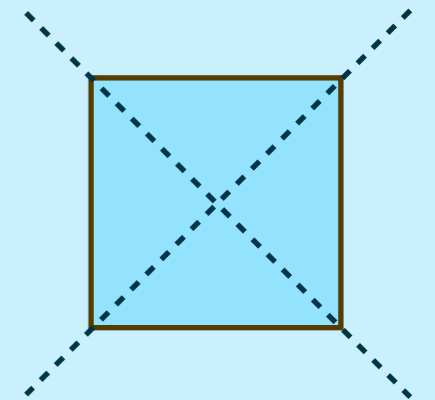
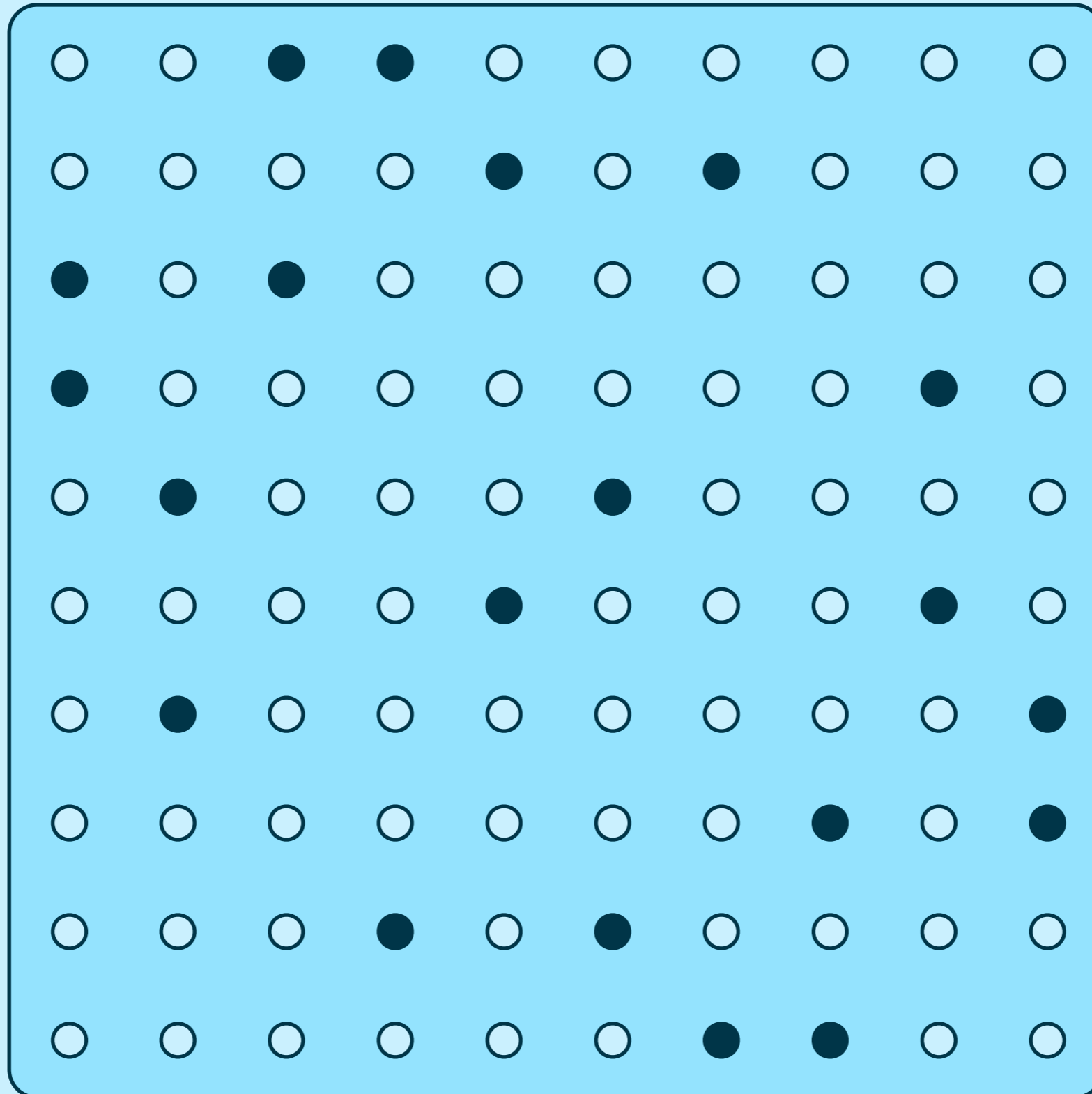
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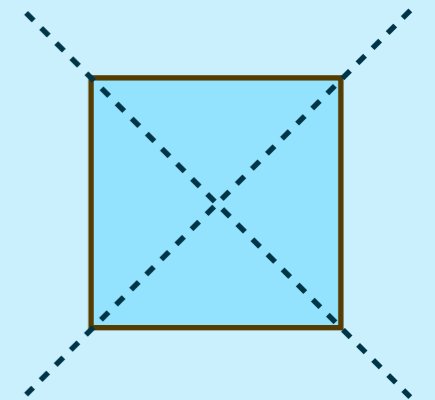
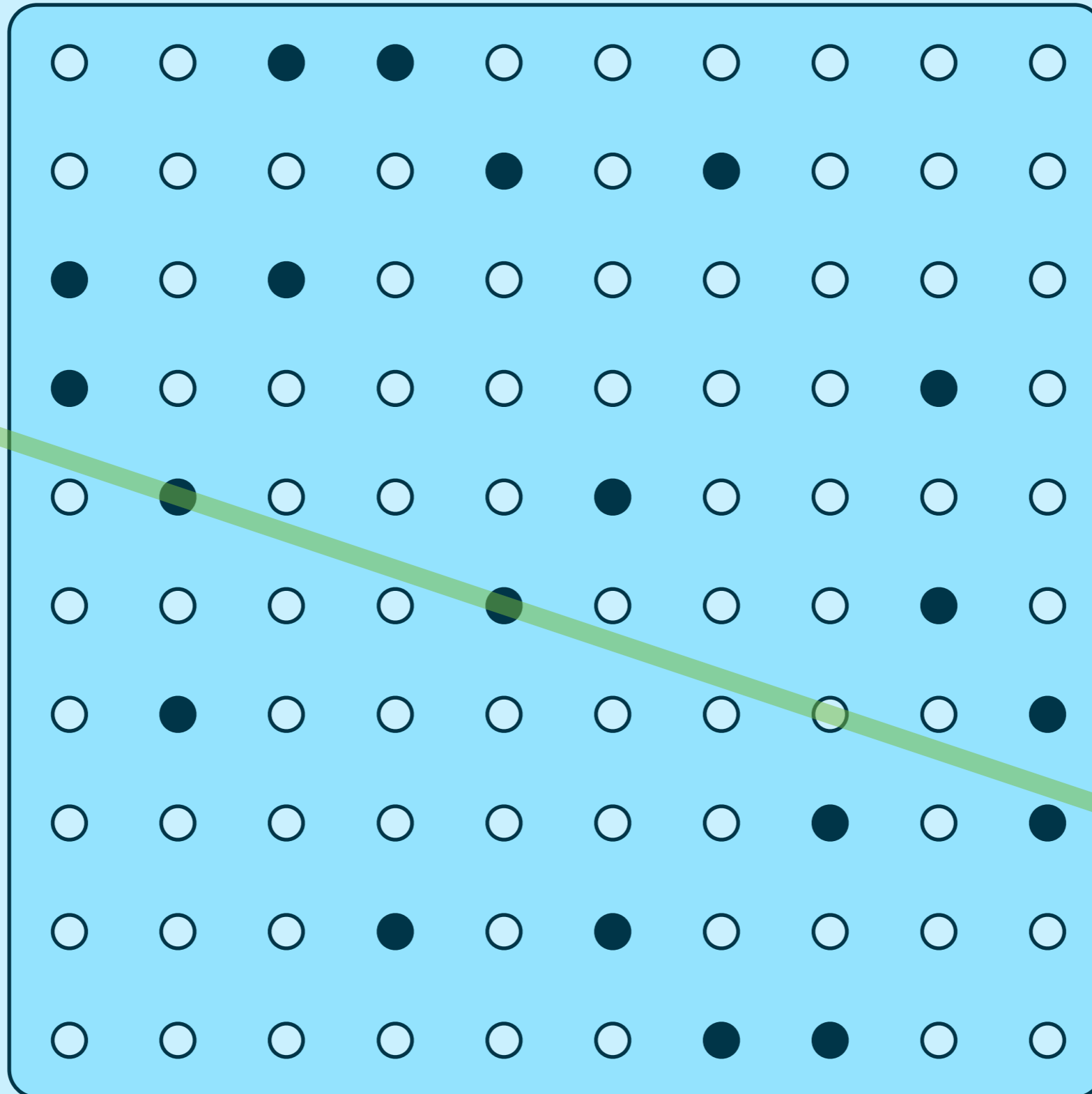
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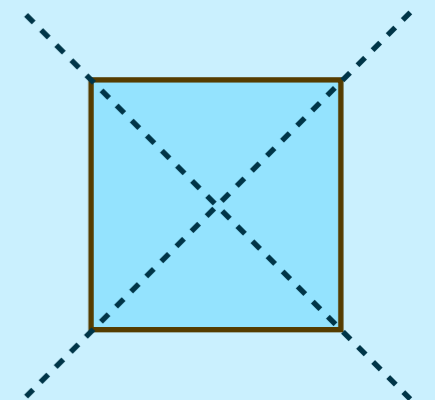
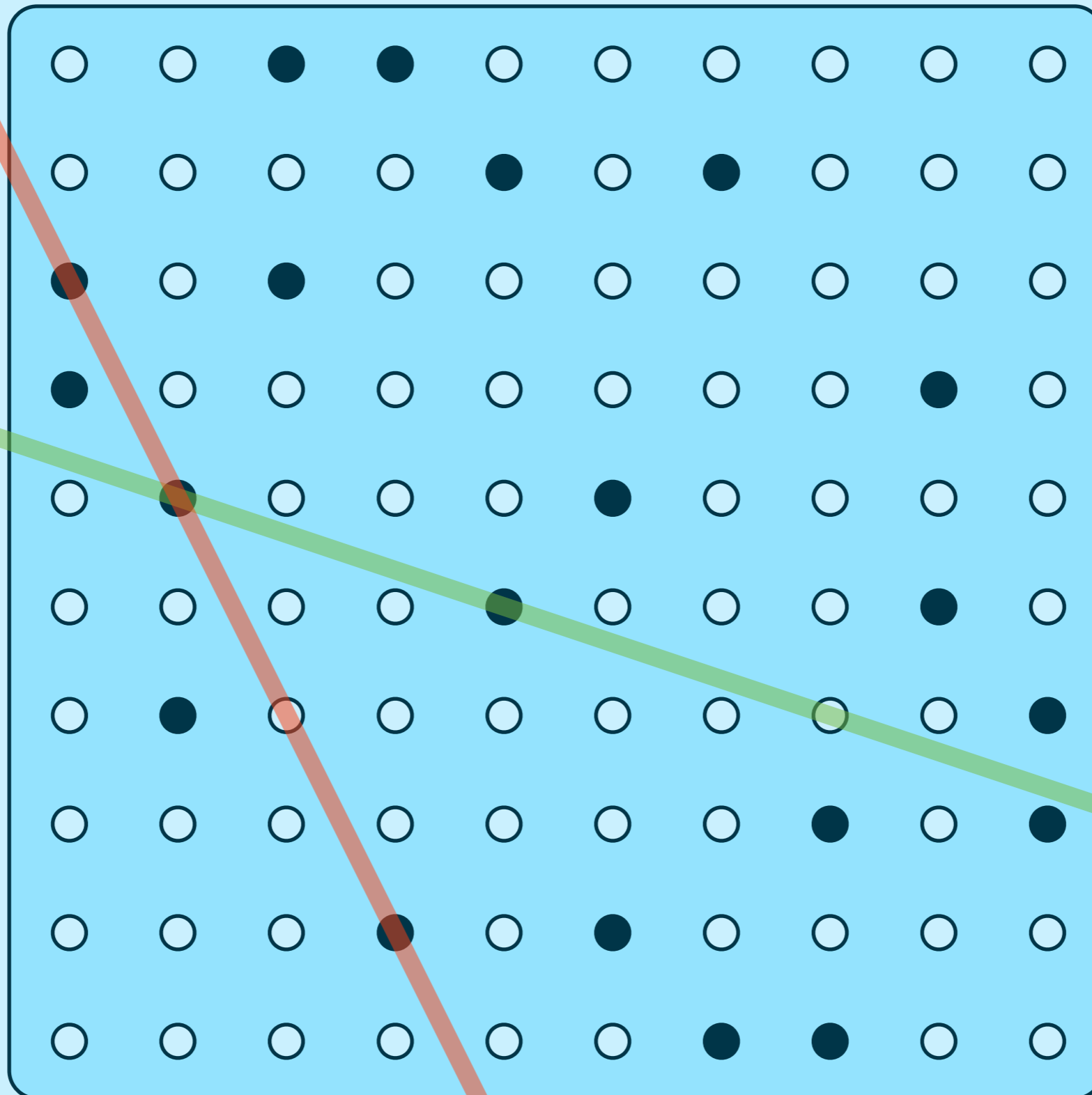
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Omar Chatriwala

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