

When is a
crystal graph
not
crystallographic?

Olaf Delgado

Too much
symmetry

Crystal nets

Another Collatz
problem

Labelled quotient
graphs

Tutte's barycentric
embedding

When is a crystal graph not crystallographic?

Olaf Delgado-Friedrichs

Order!Order? — Canberra 4 Dec 2019

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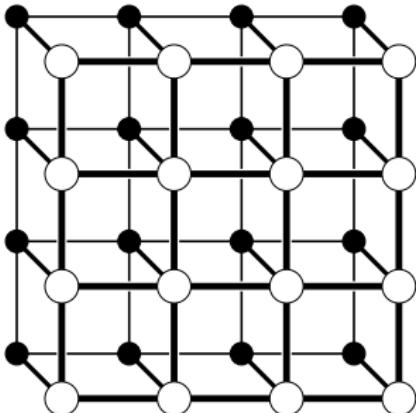
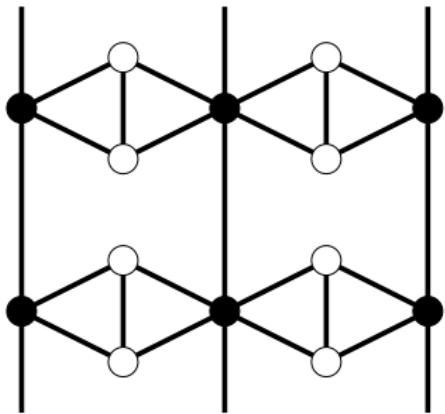
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More precisely: when its automorphism group is not a crystallographic space group.

*(Crystallographic nets and their quotient graphs,
W. E. Klee 2004.)*

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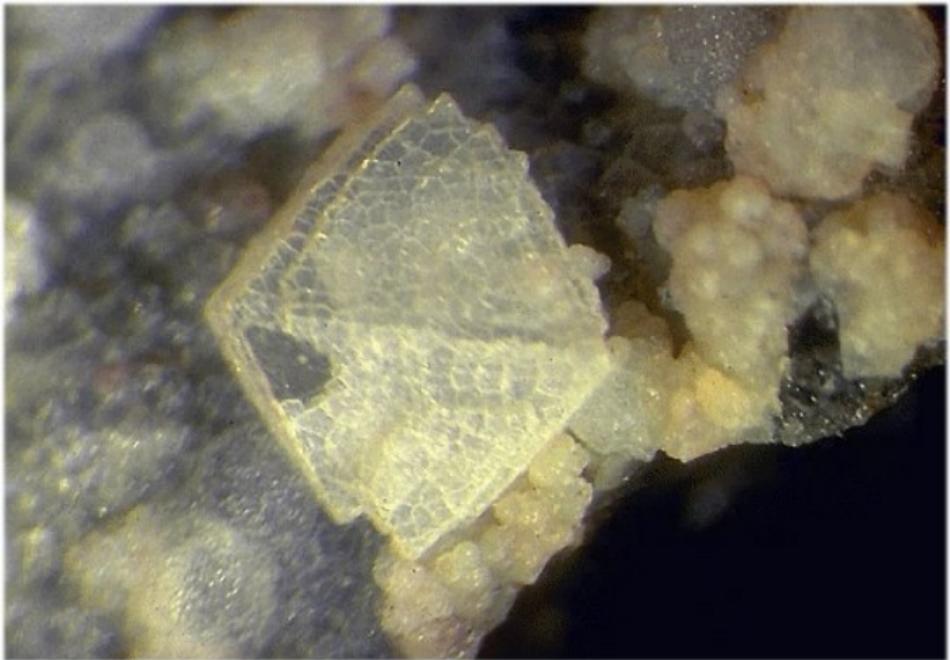
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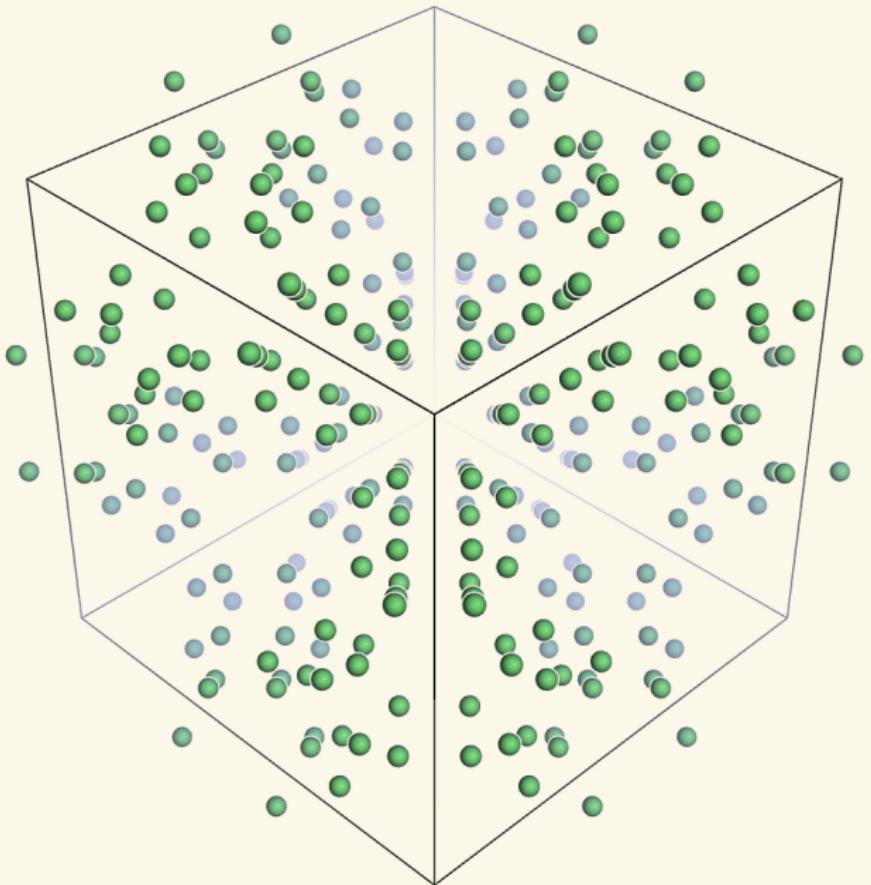
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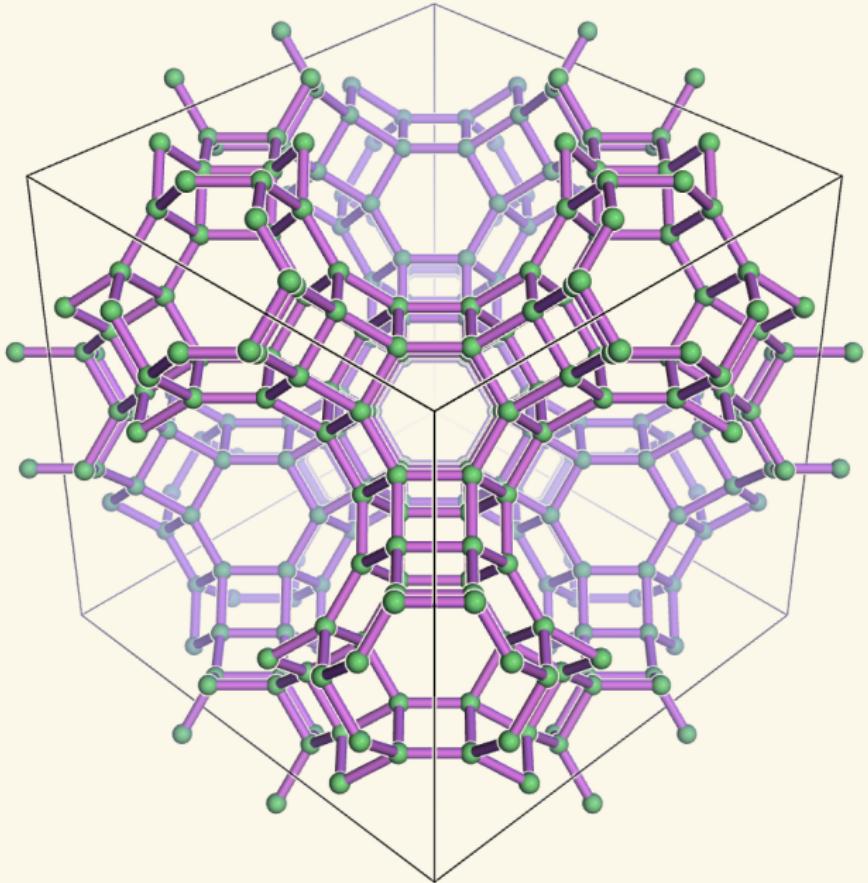
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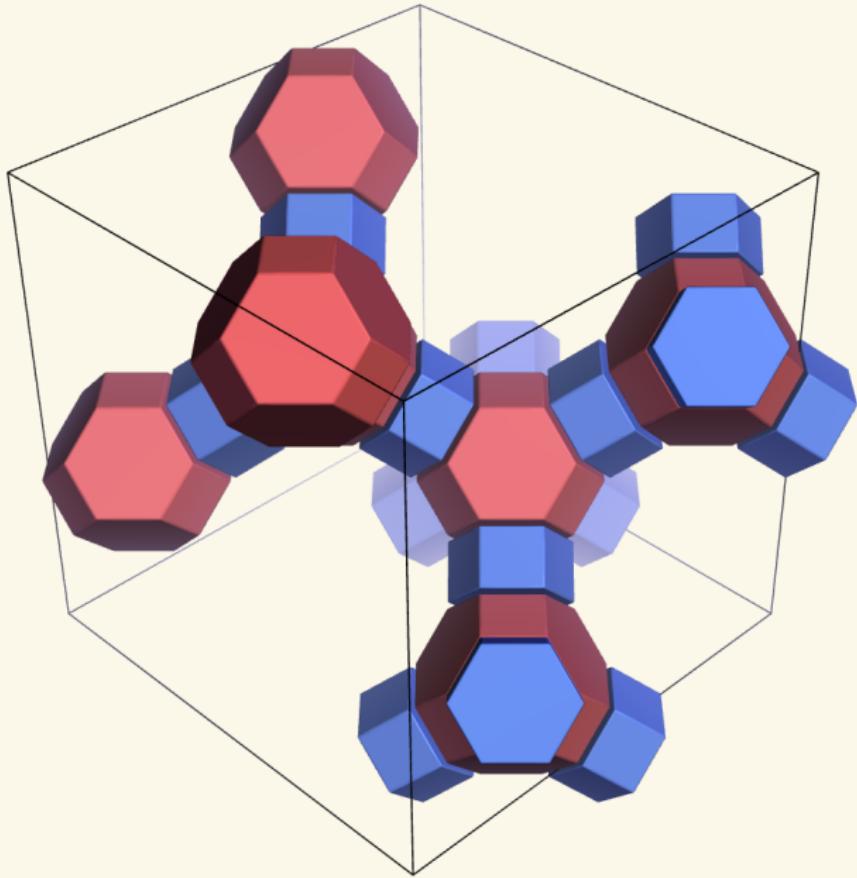
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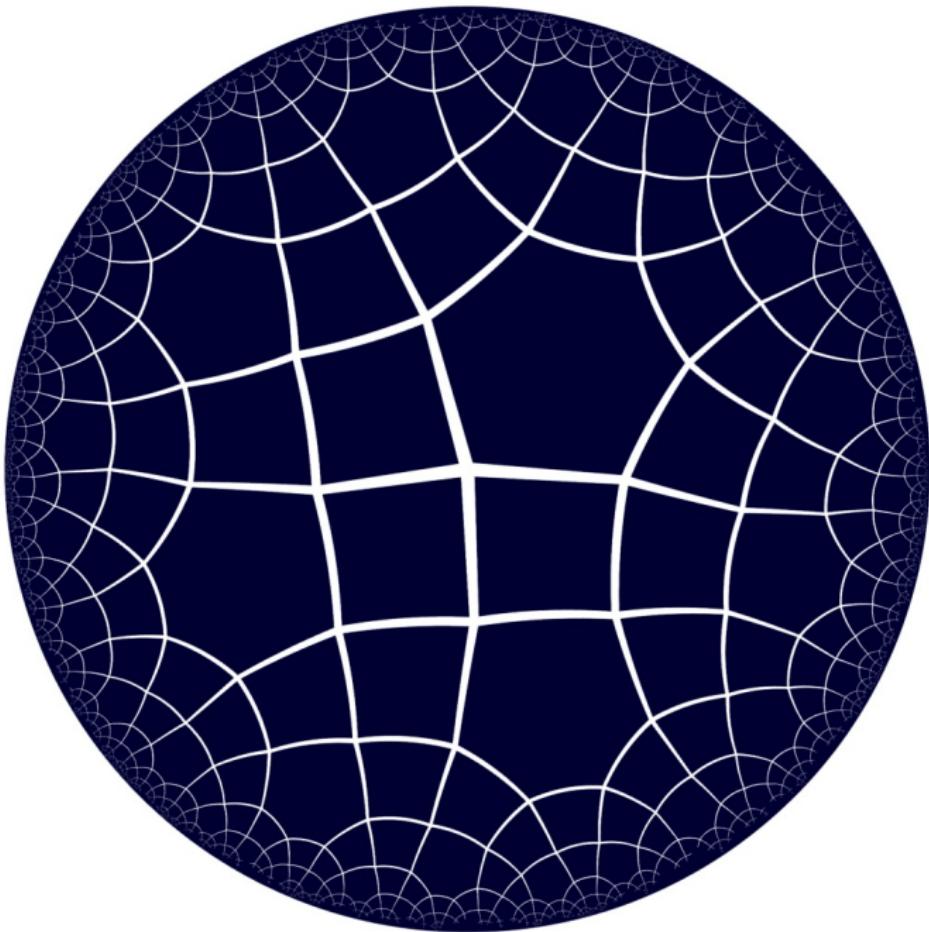
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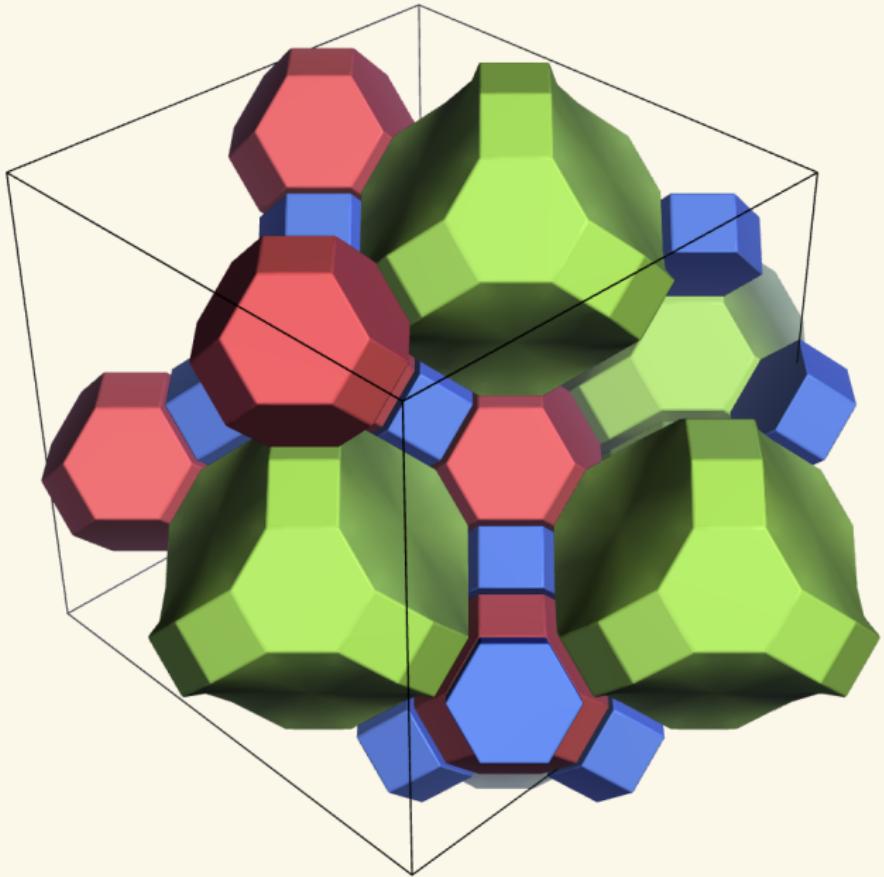
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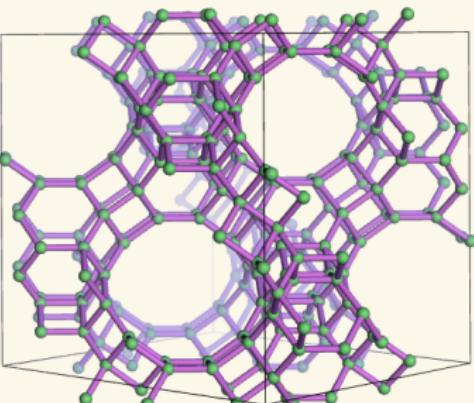
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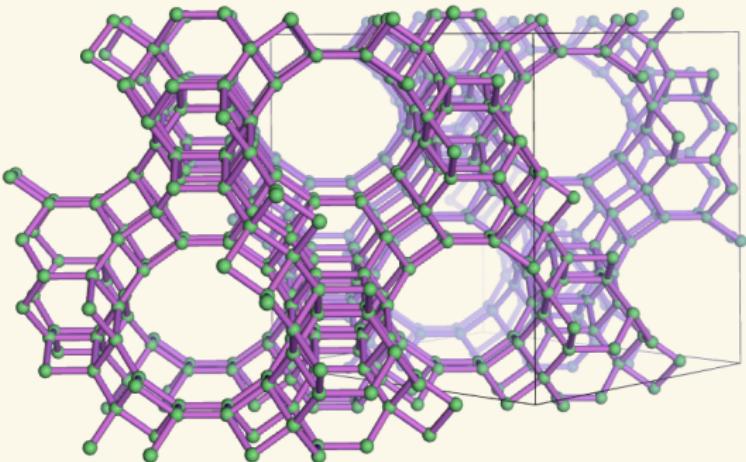
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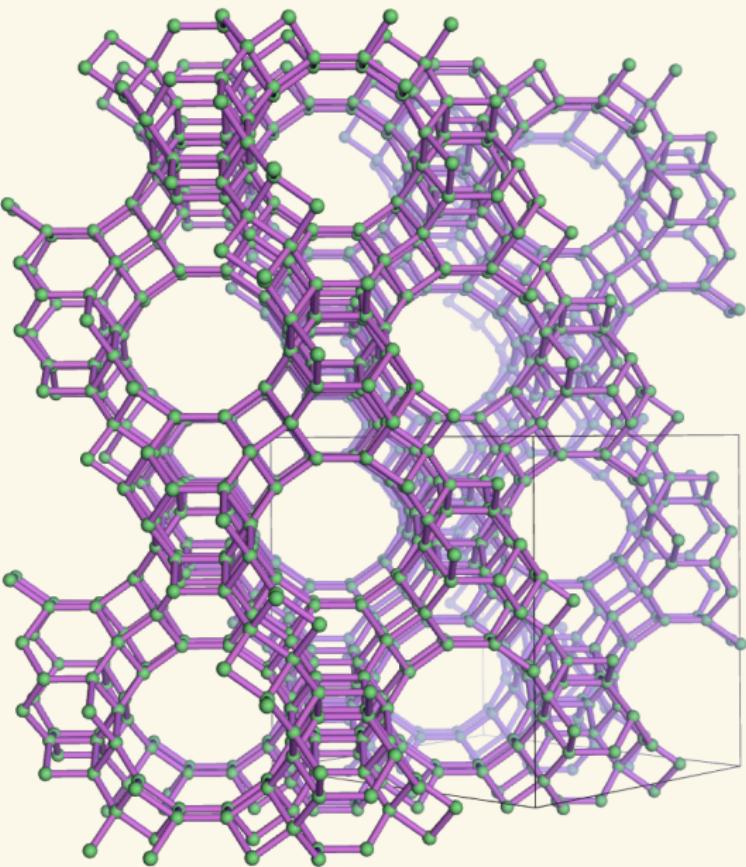
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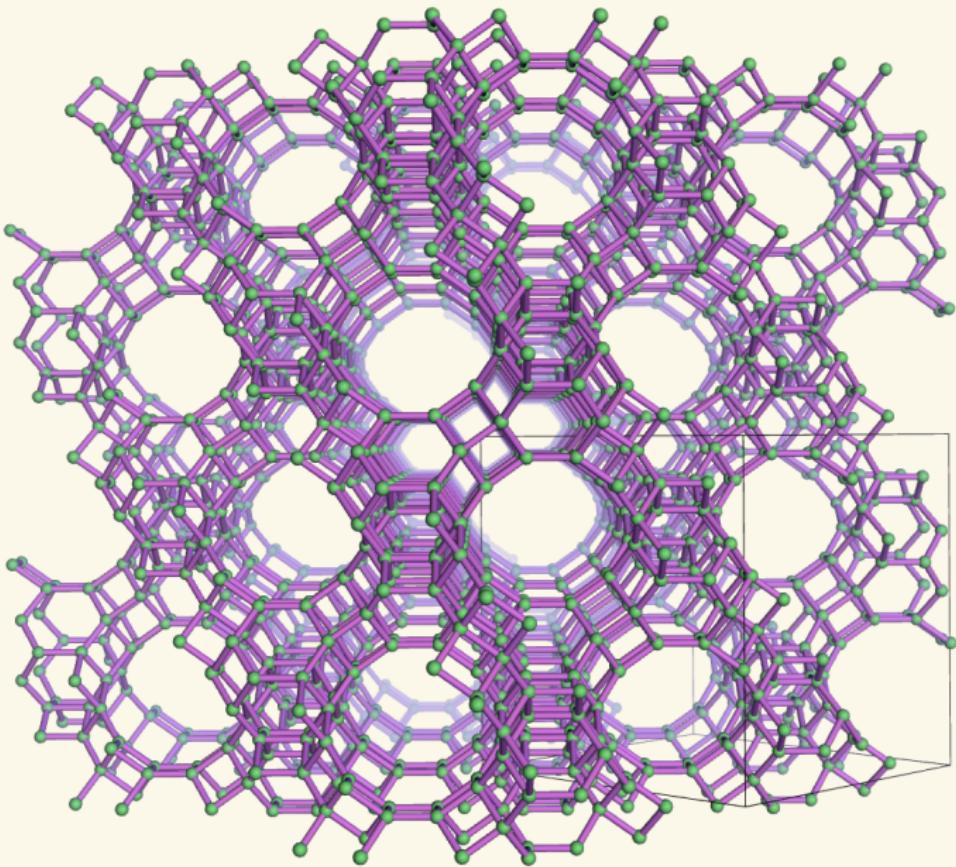
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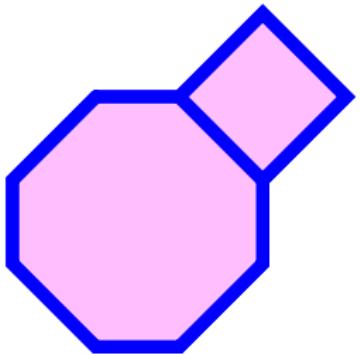
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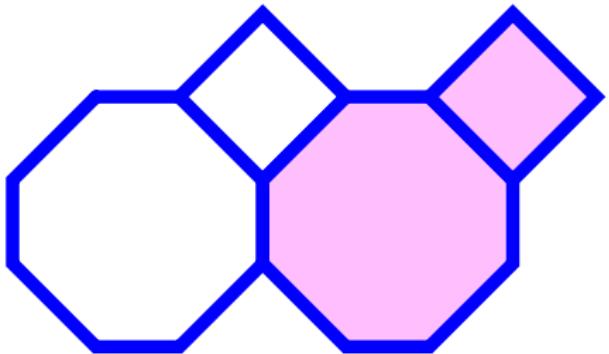
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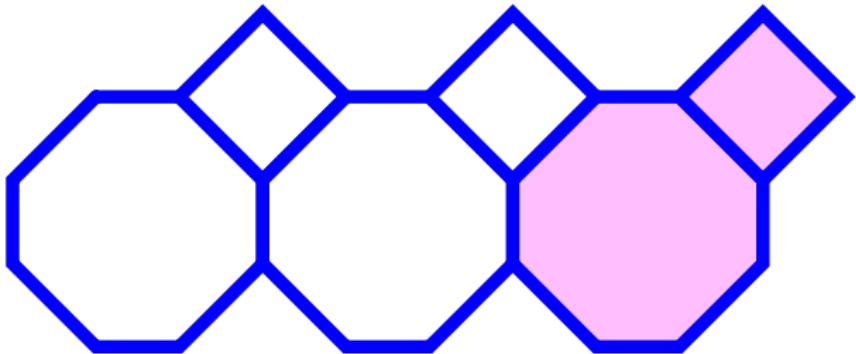
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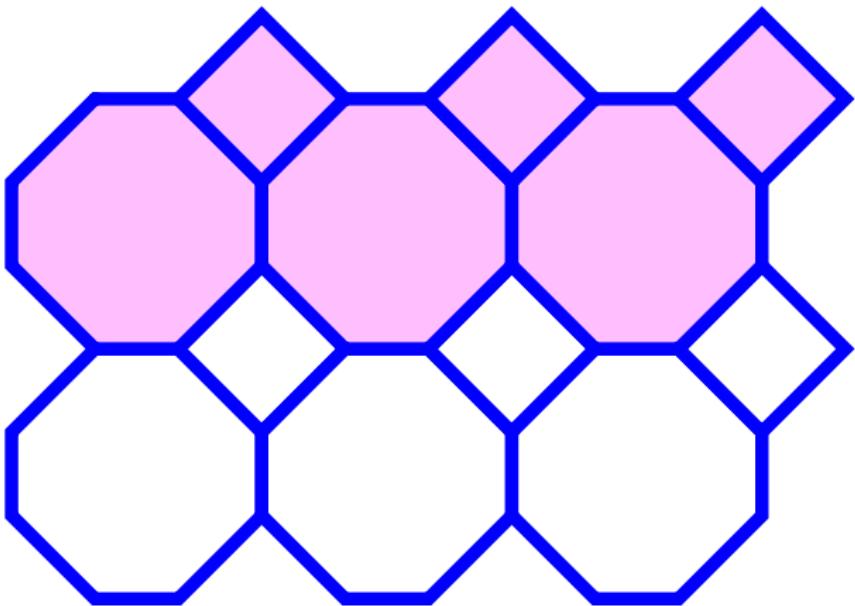
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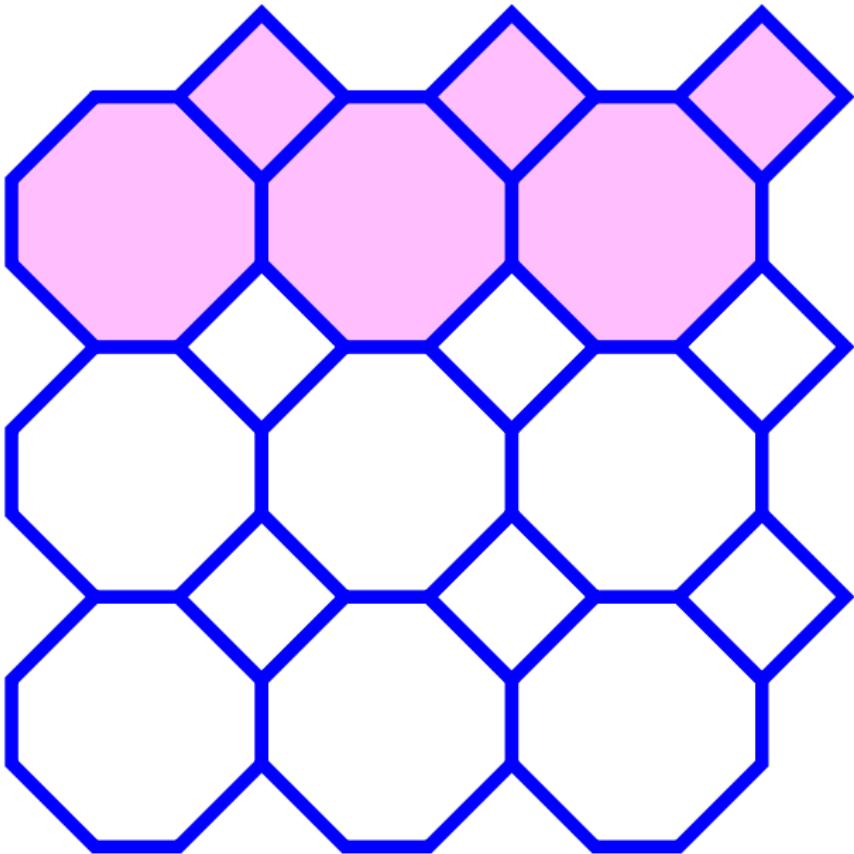
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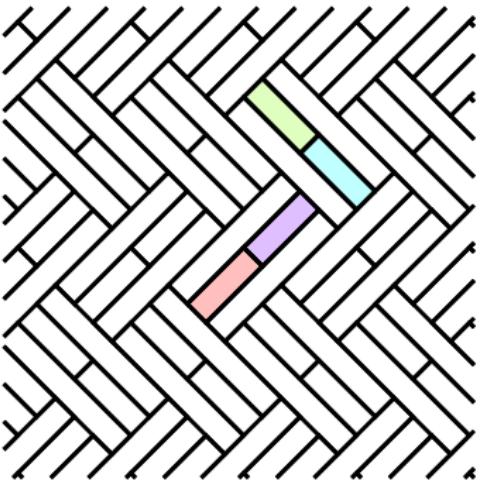
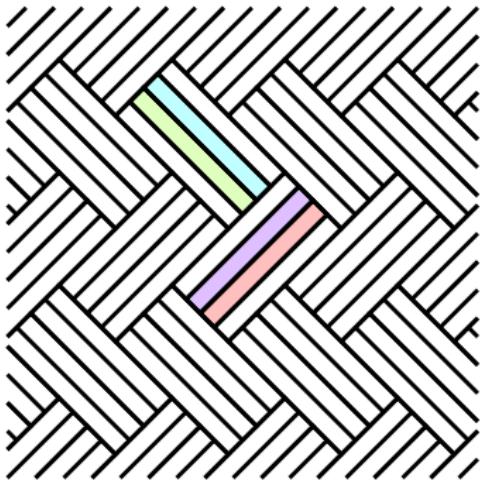
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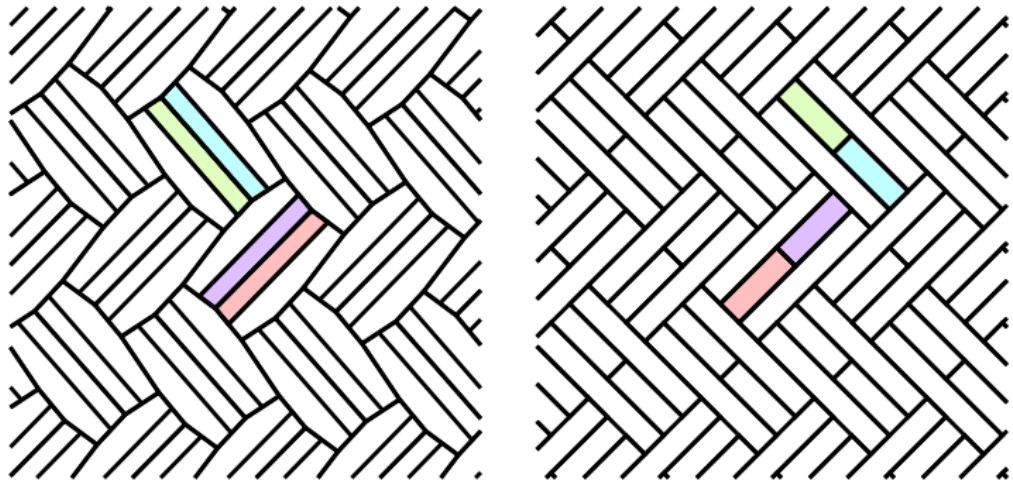
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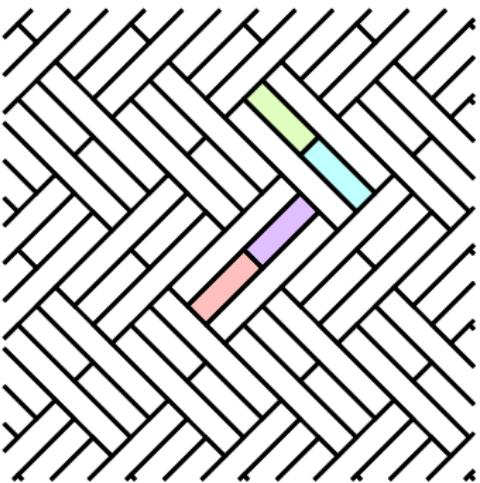
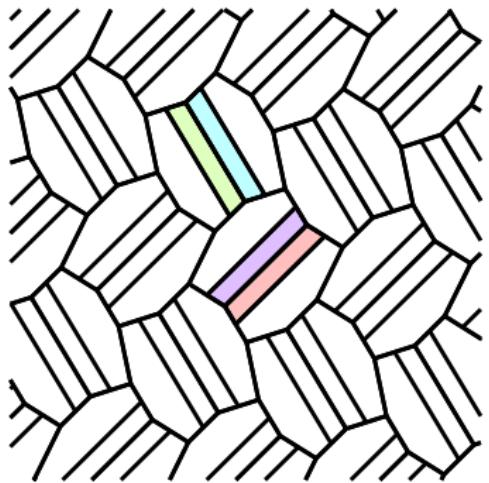
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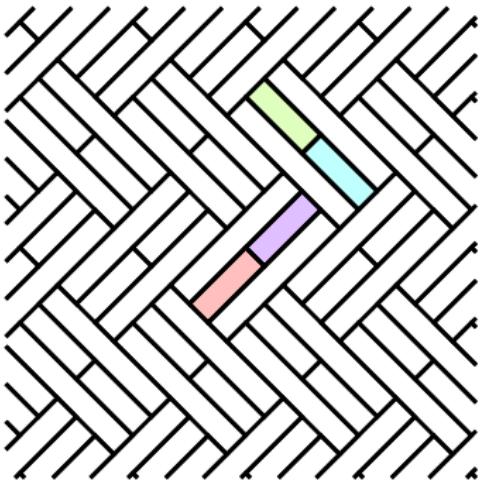
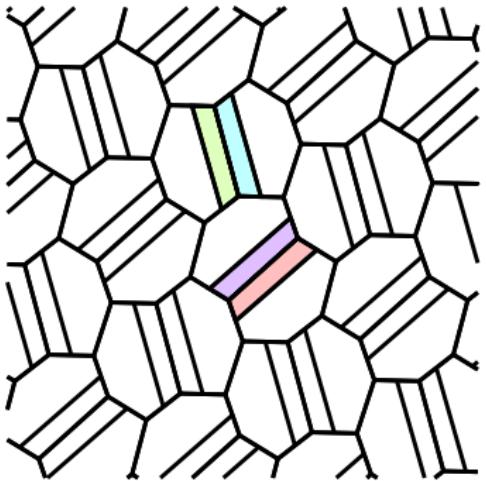
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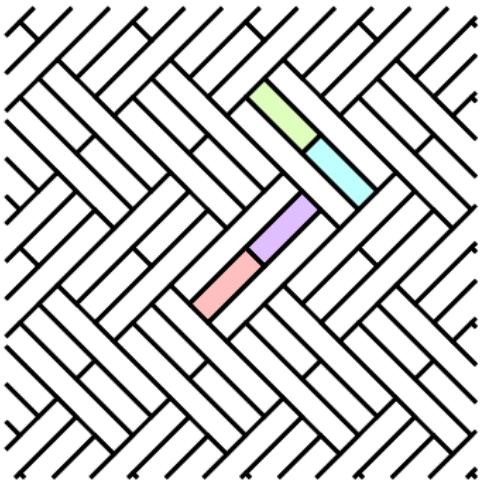
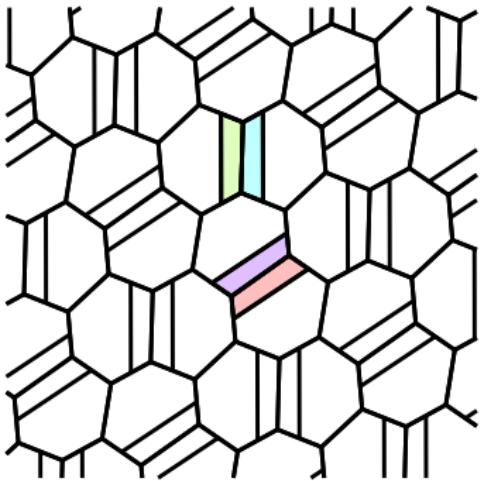
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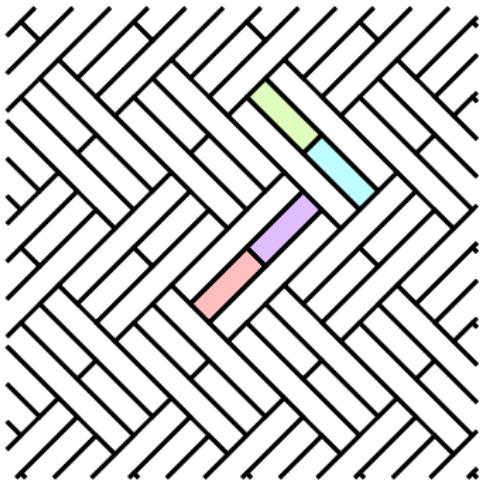
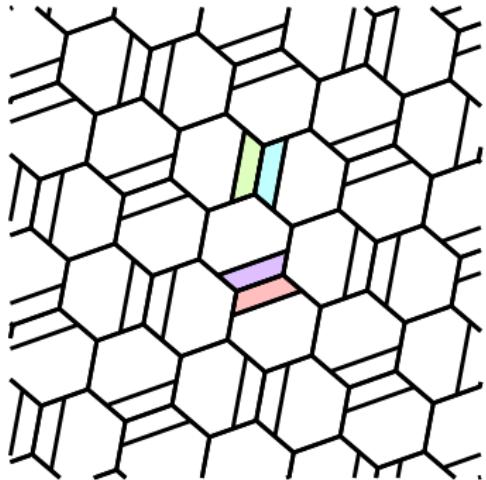
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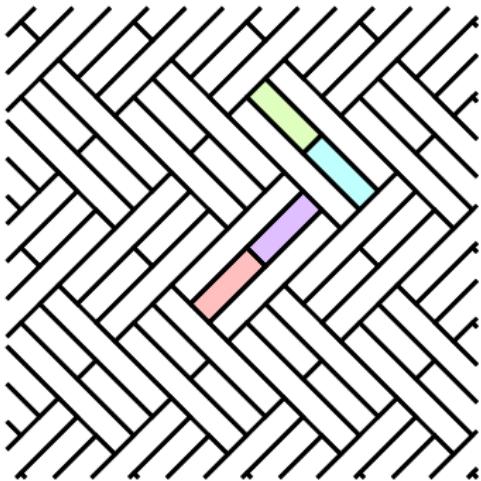
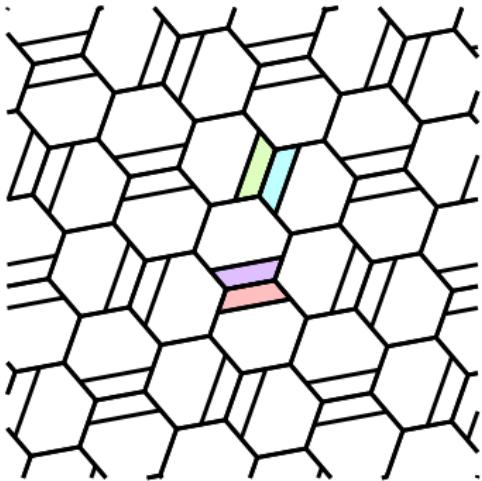
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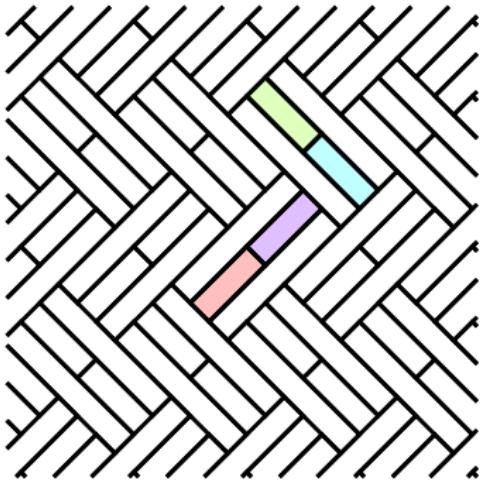
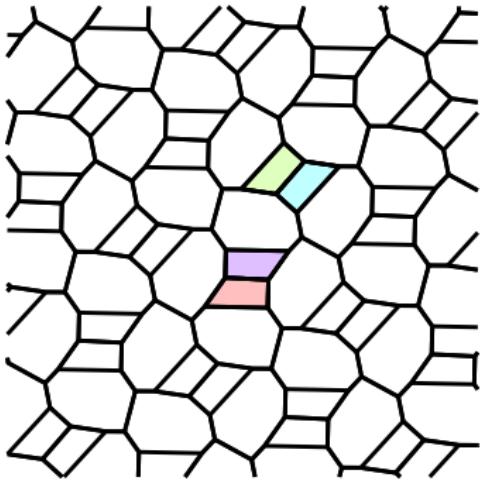
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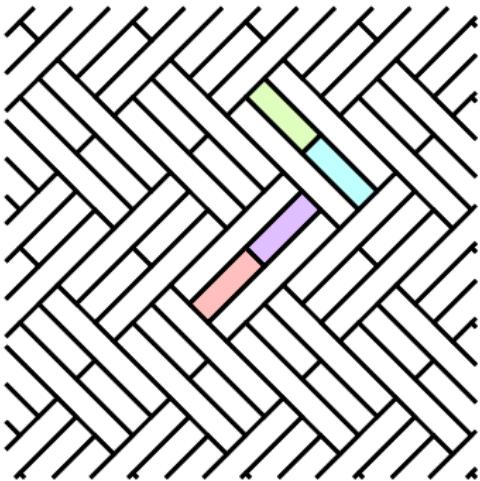
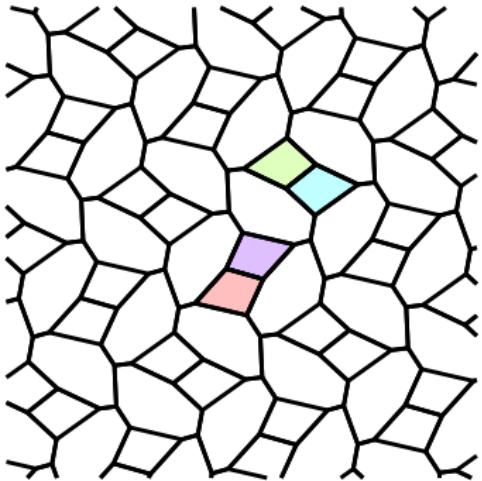
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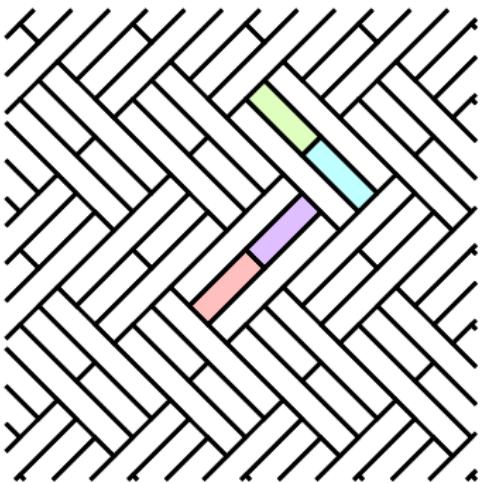
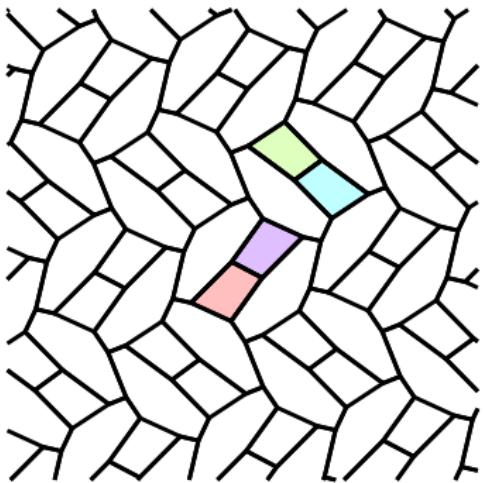
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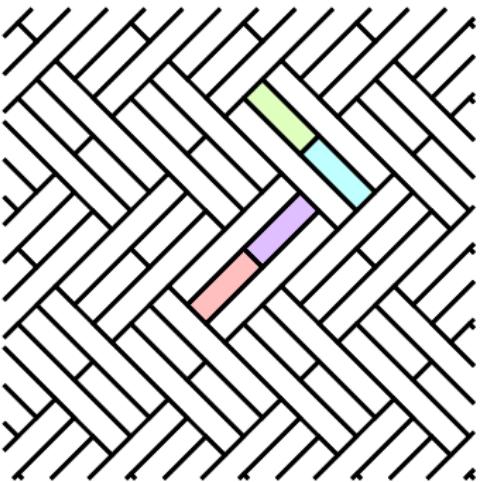
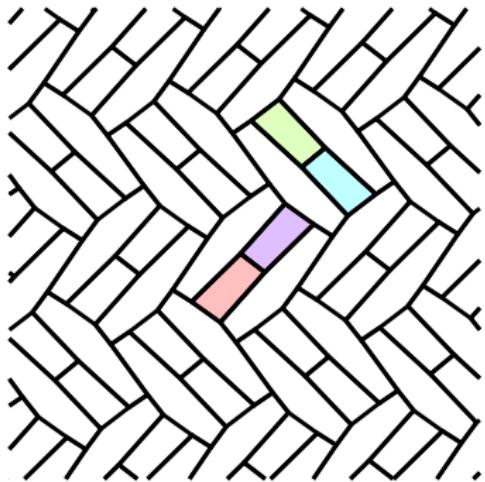
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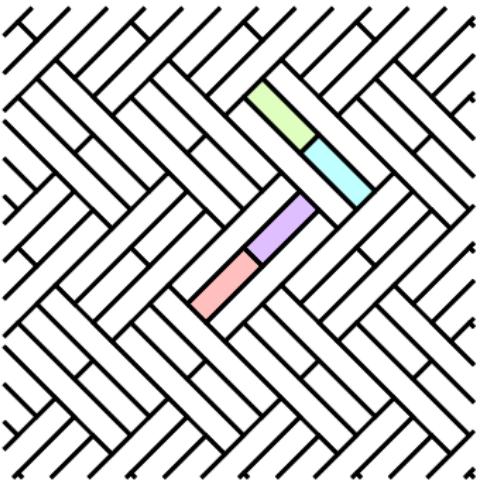
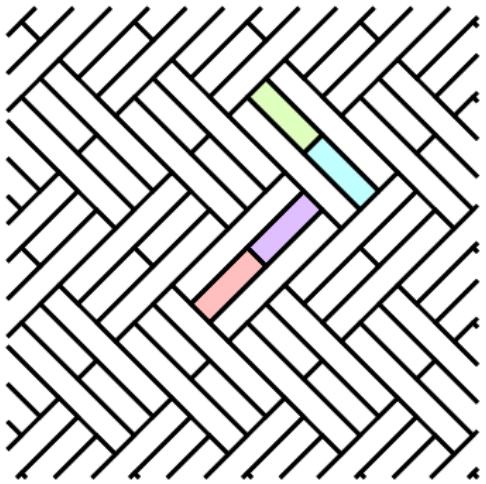
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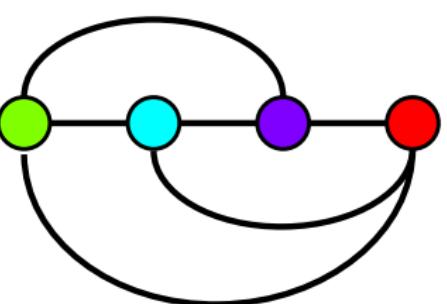
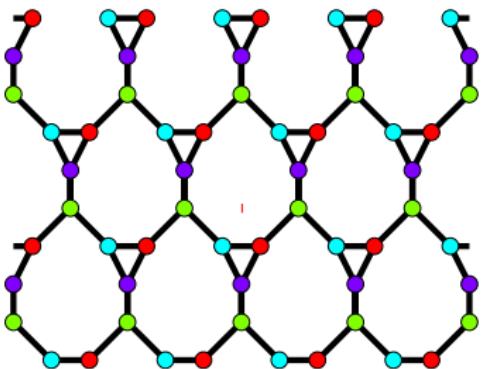
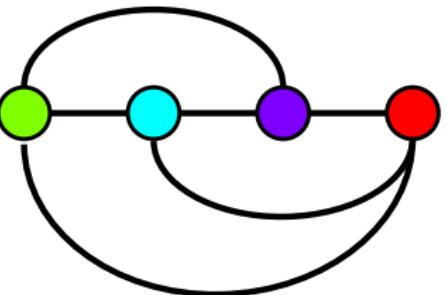
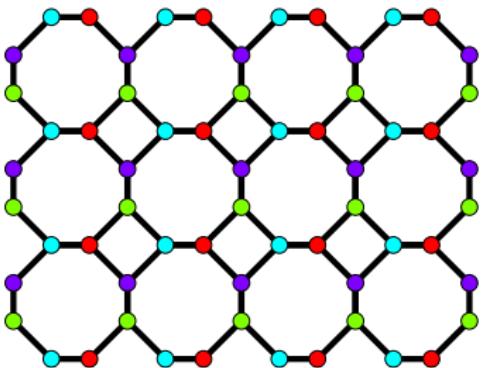
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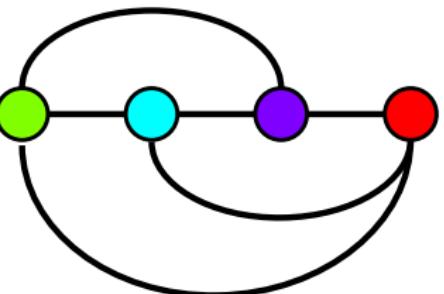
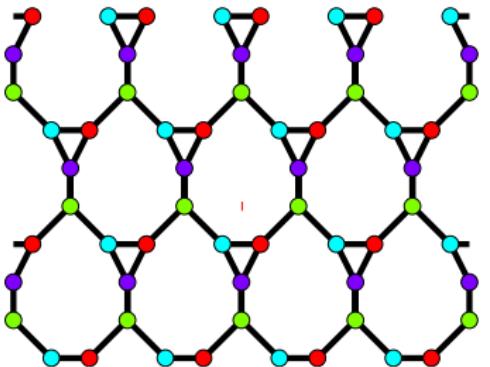
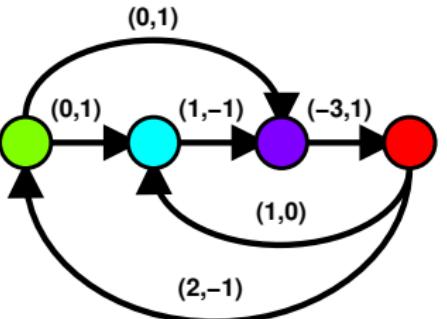
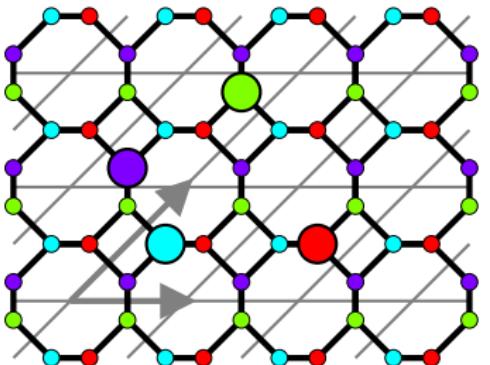
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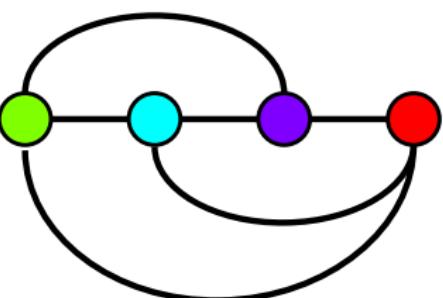
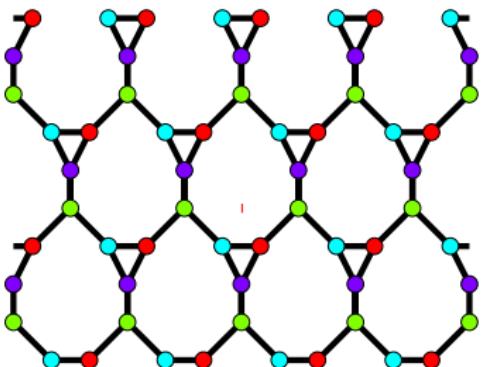
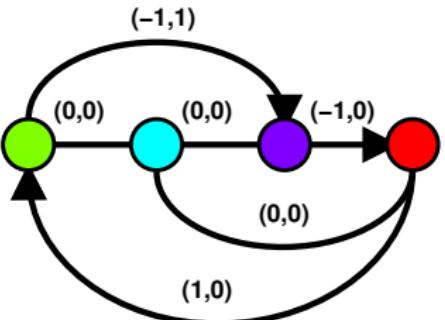
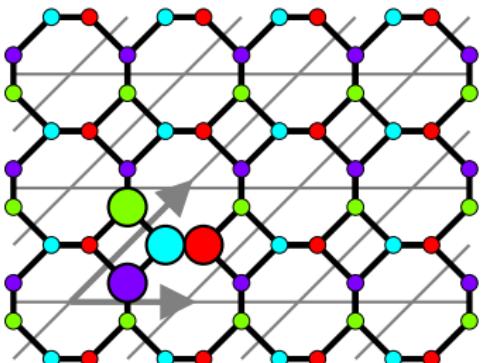
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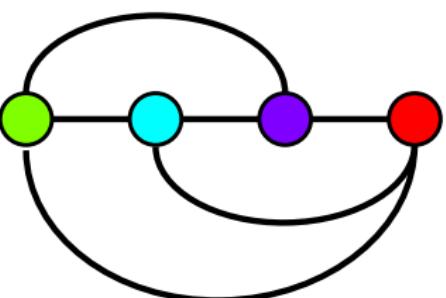
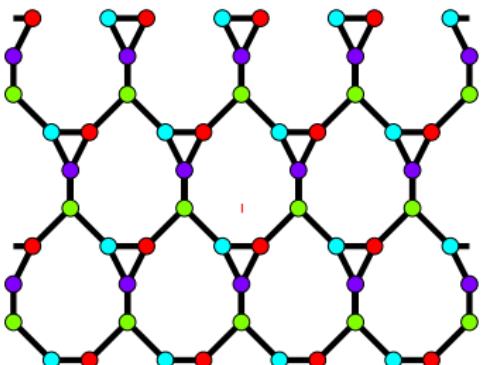
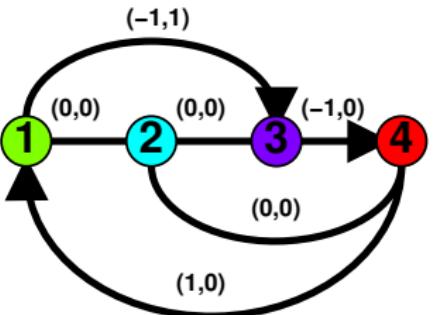
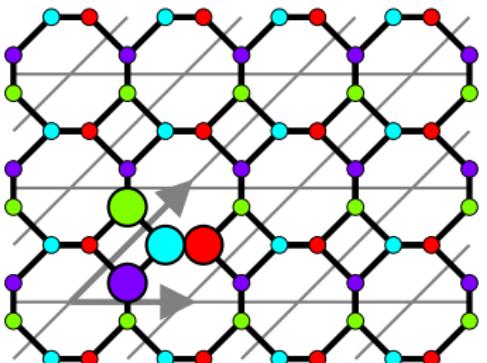
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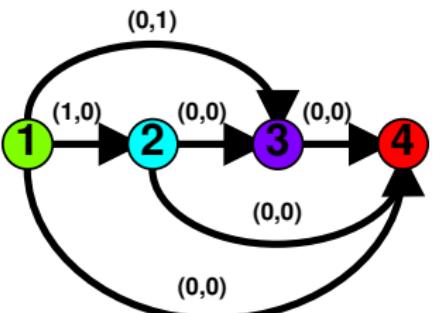
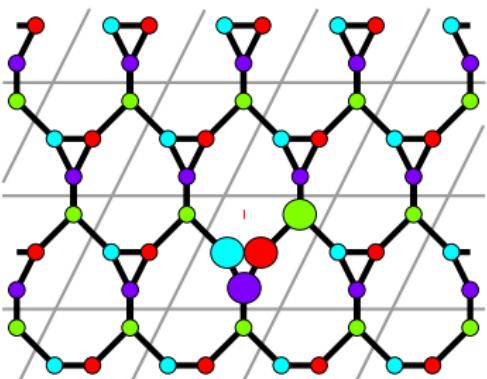
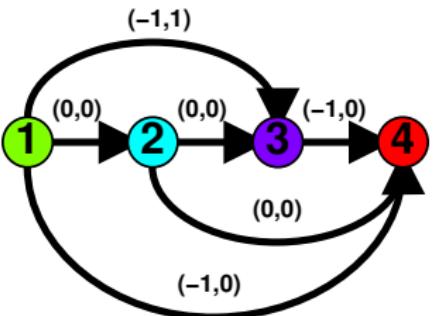
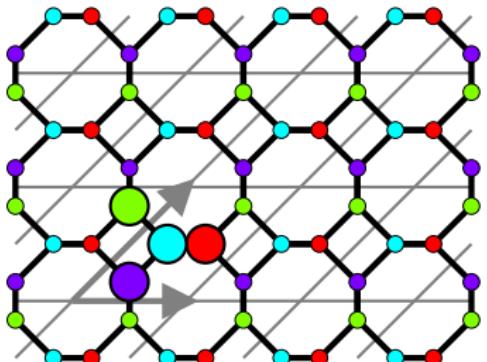
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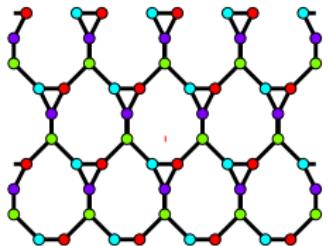
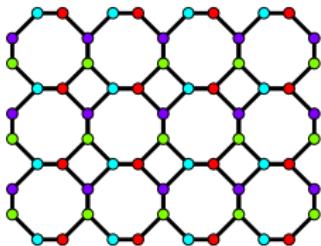
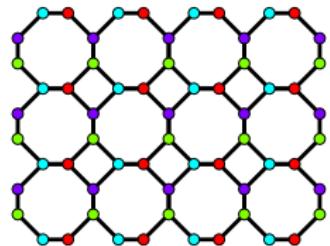
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1	2	0	1
1	3	0	1
1	4	-2	1
2	3	1	-1
2	4	-1	0
3	4	-3	1

1	2	0	0
1	3	-1	1
1	4	-1	0
2	3	0	0
2	4	0	0
3	4	-1	0

1	2	1	0
1	3	0	1
1	4	0	0
2	3	0	0
2	4	0	0
3	4	0	0



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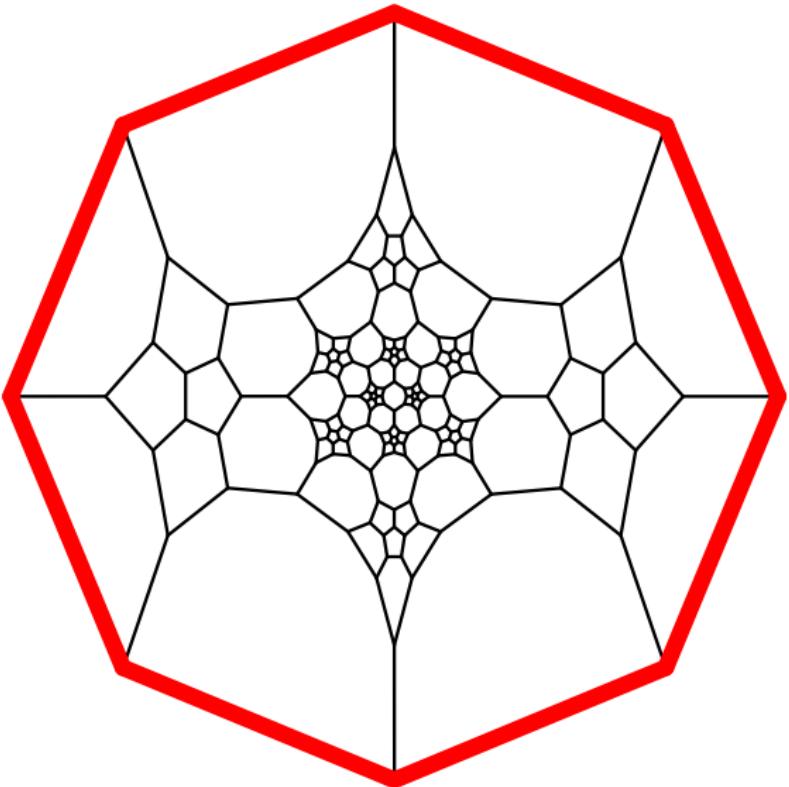
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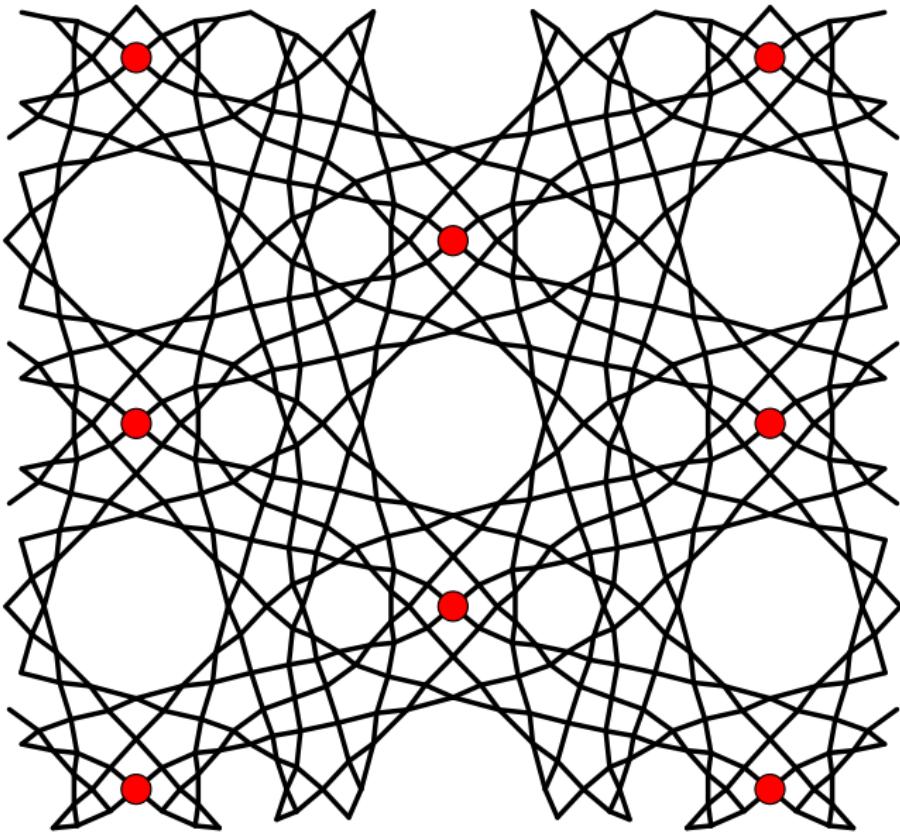
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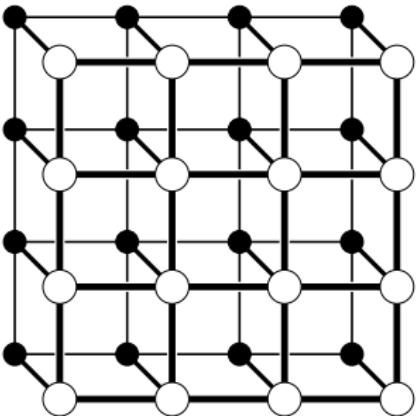
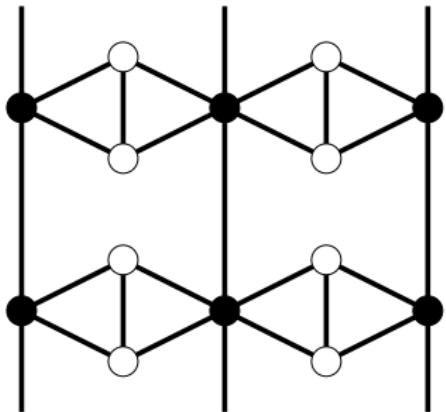
Labelled quotient
graphs

Tutte's barycentric
embedding



When is a
crystal graph
not
crystallographic?

Olaf Delgado



Too much
symmetry

Crystal nets

Another Collatz
problem

Labelled quotient
graphs

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