

# Atoms

by

Robert William Whitby

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Do atoms have shapes?

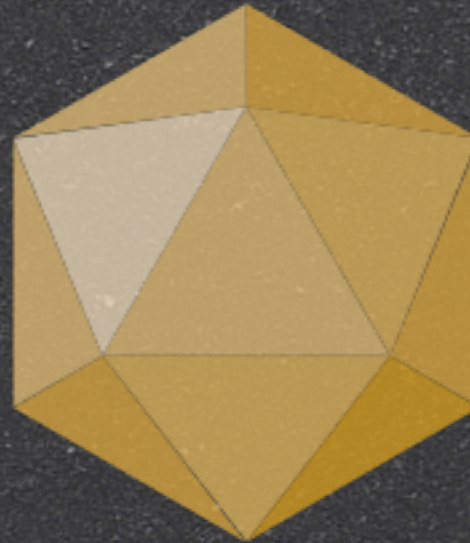
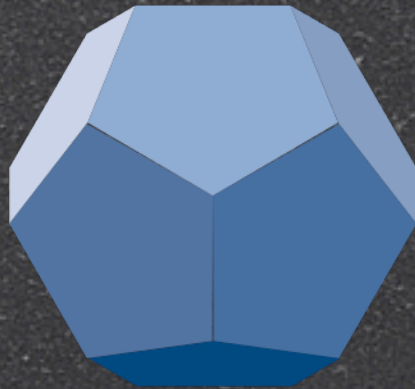


# Follow the logic

- Crystals are polyhedral
- Atoms form crystals
- Atoms are polyhedral

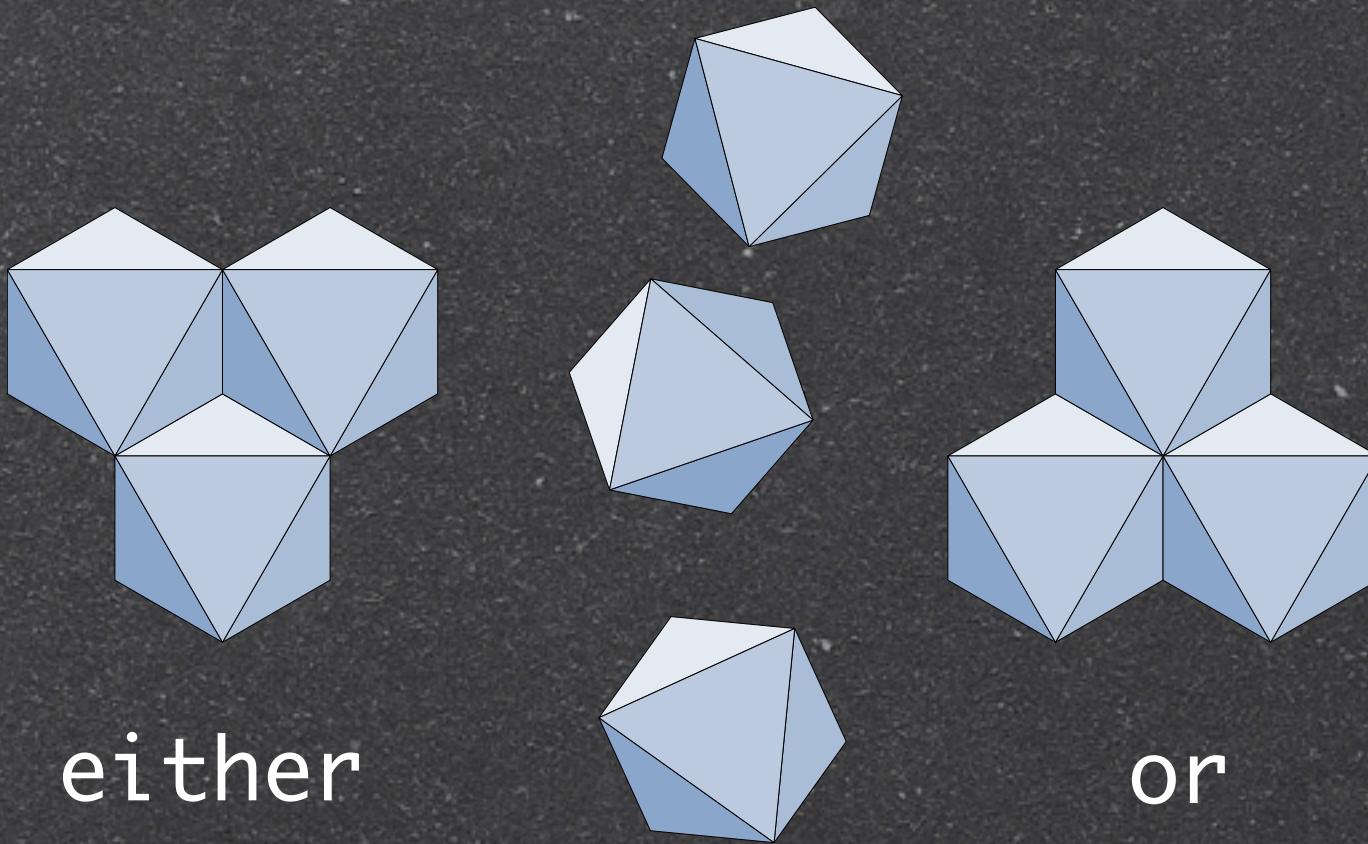


# Platonic polyhedra





# Three octas

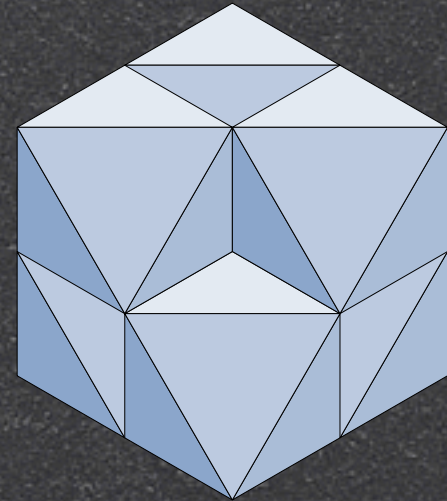
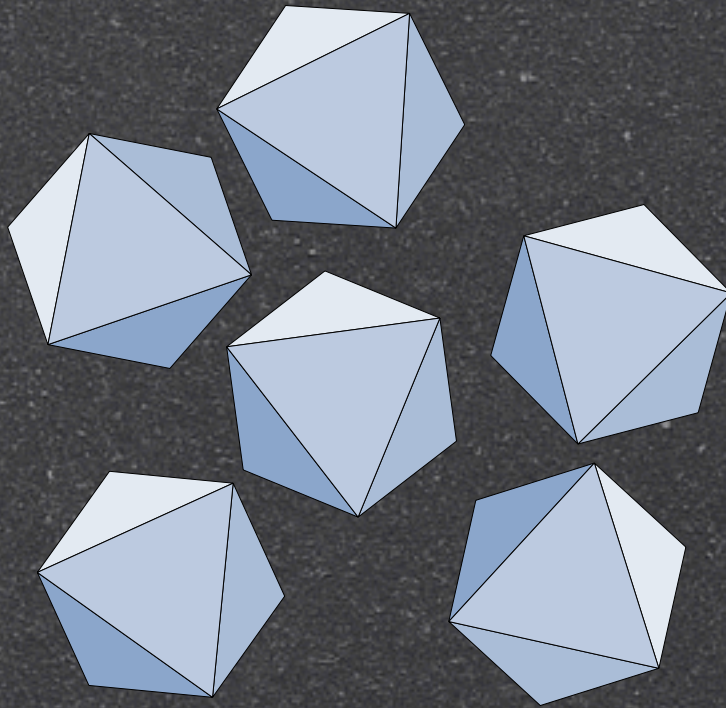


either

or



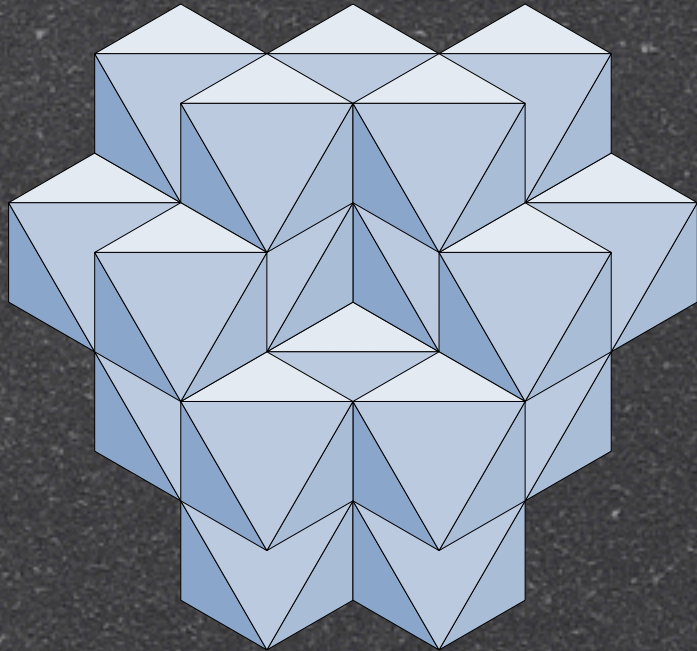
# Six octas



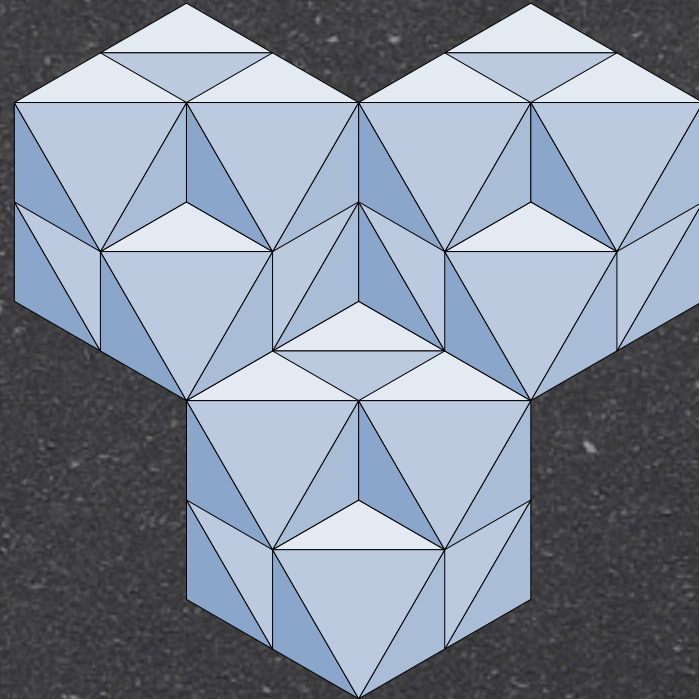
two threes



# Eighteen octas



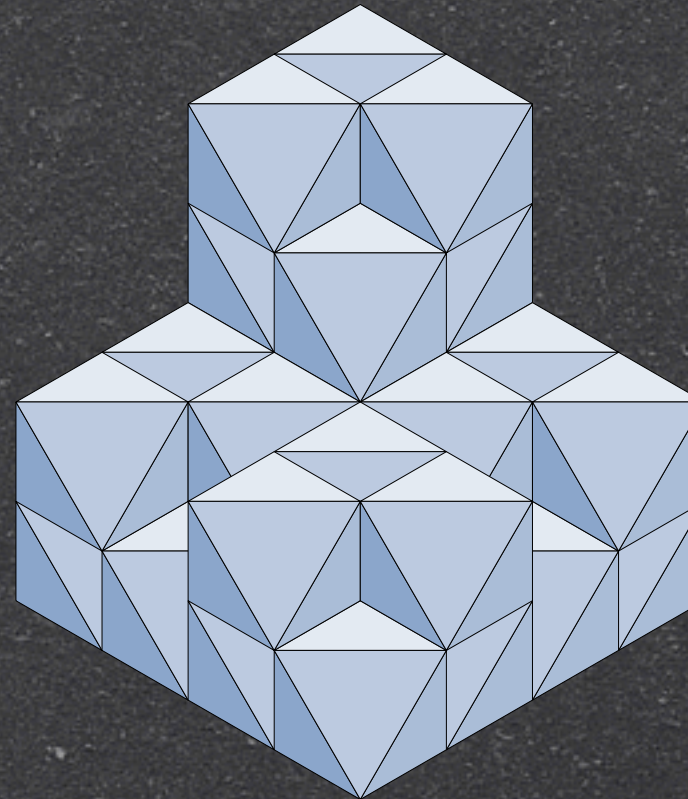
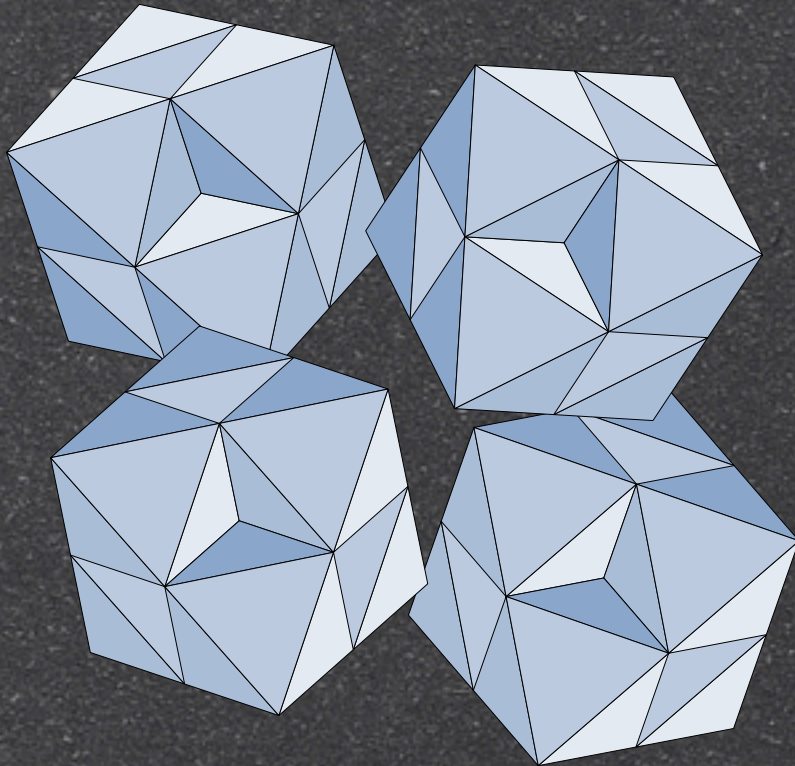
six threes



three sixes



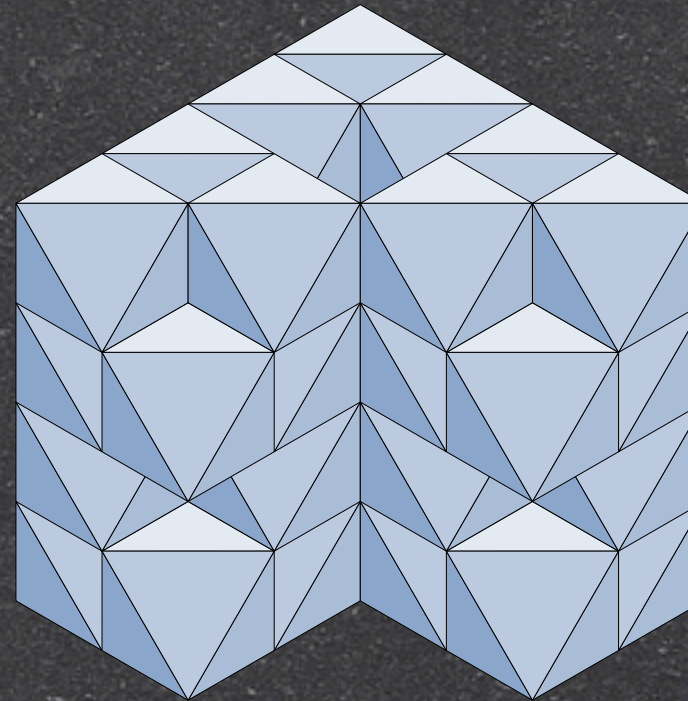
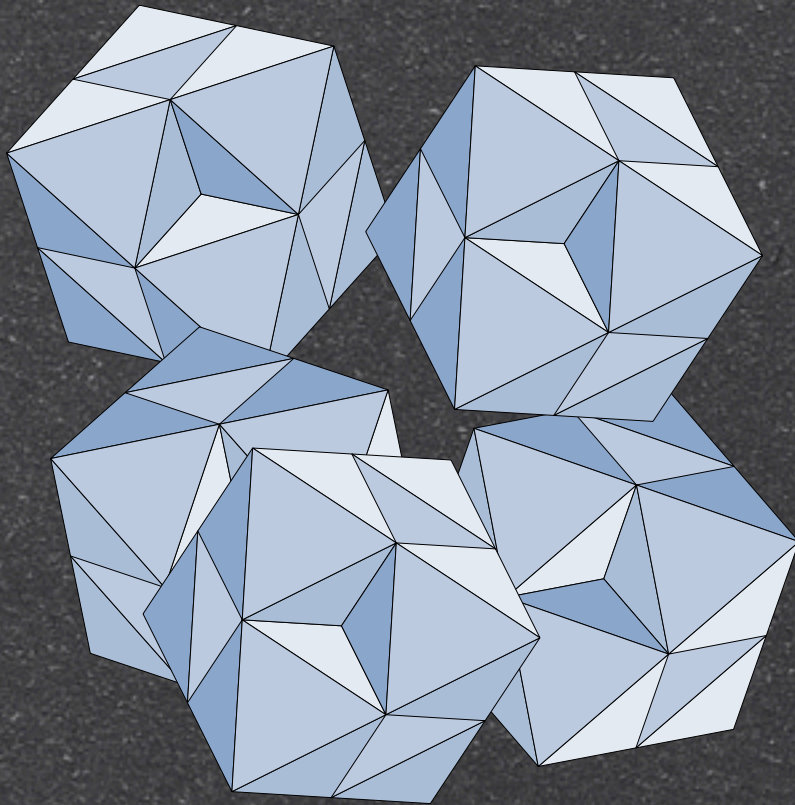
# Twenty-four octas



four sixes



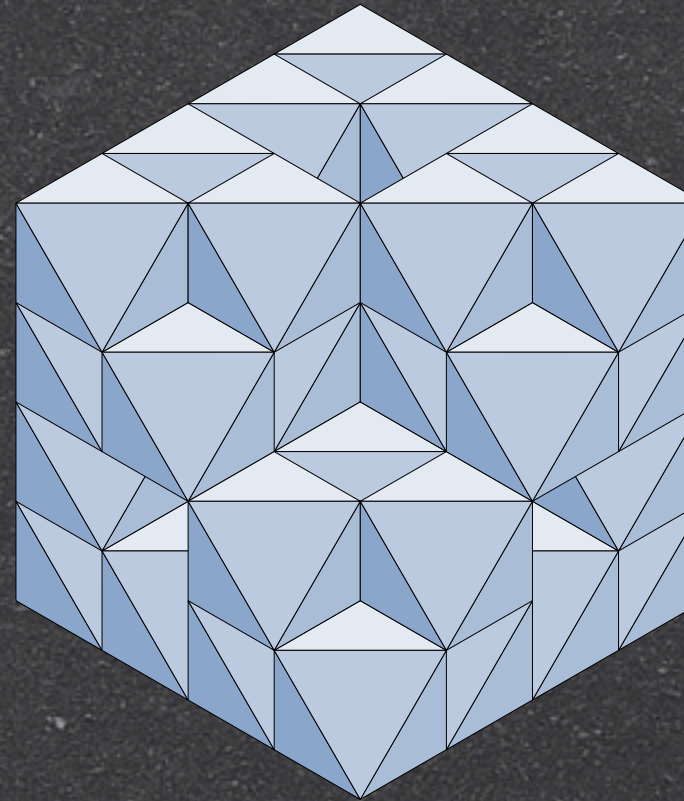
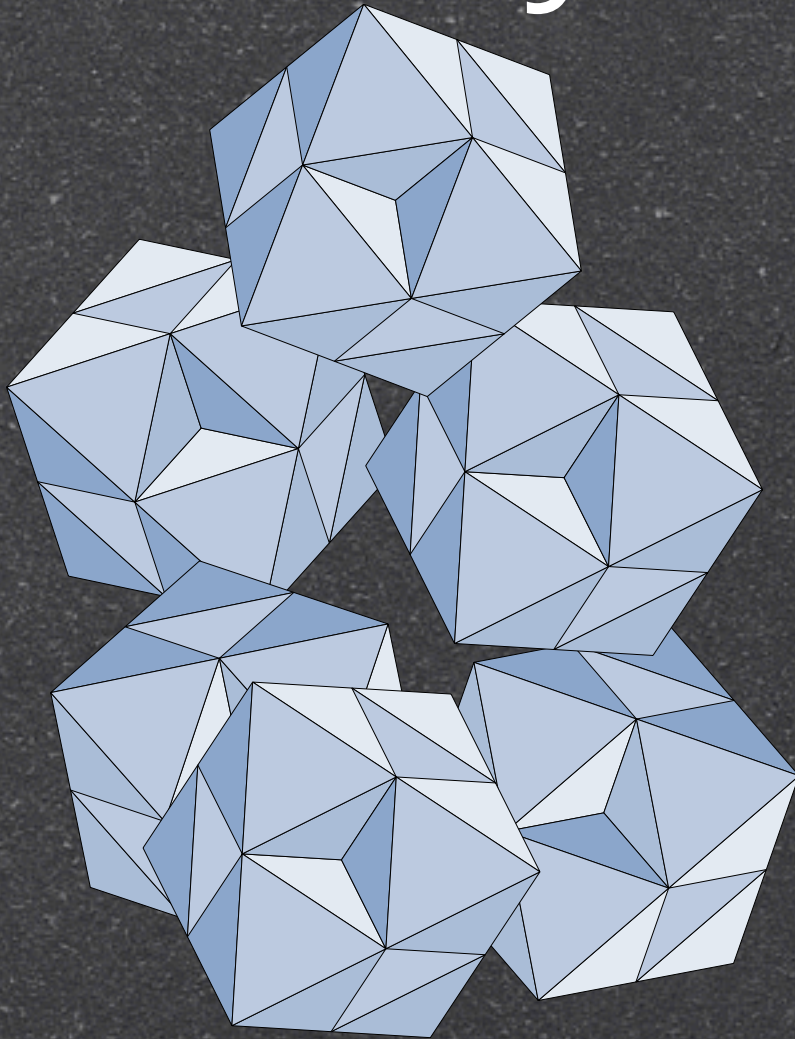
# Thirty octas



five sixes



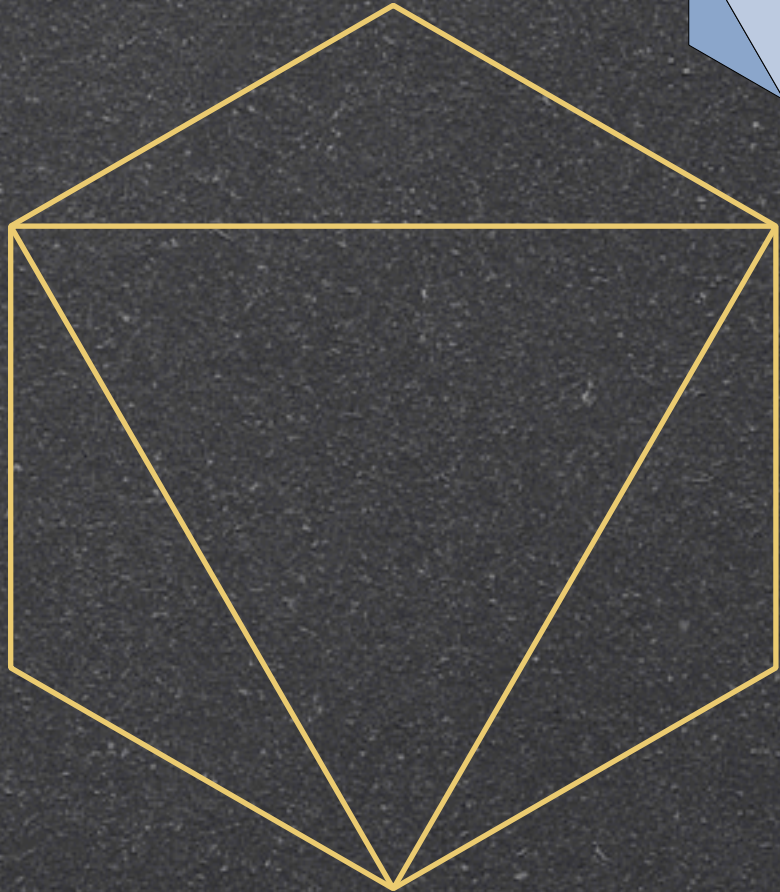
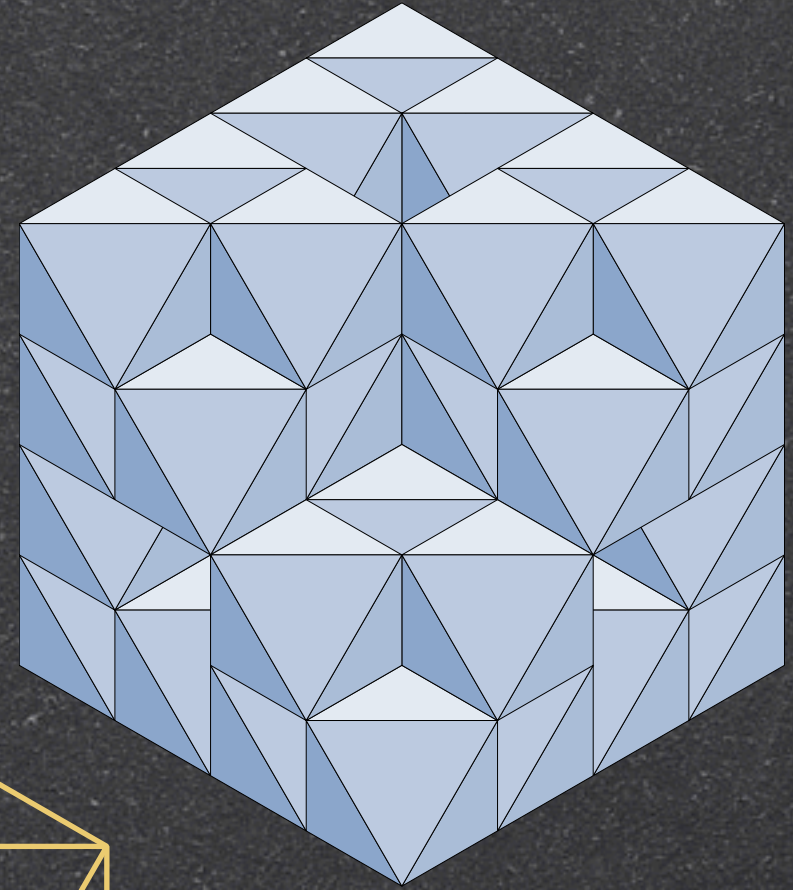
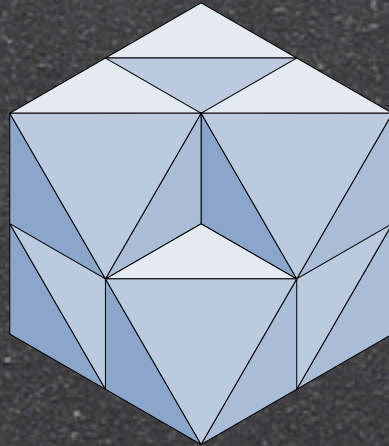
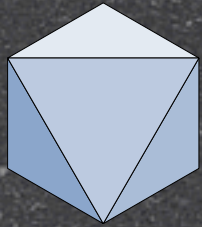
# Thirty-six octas



six sixes

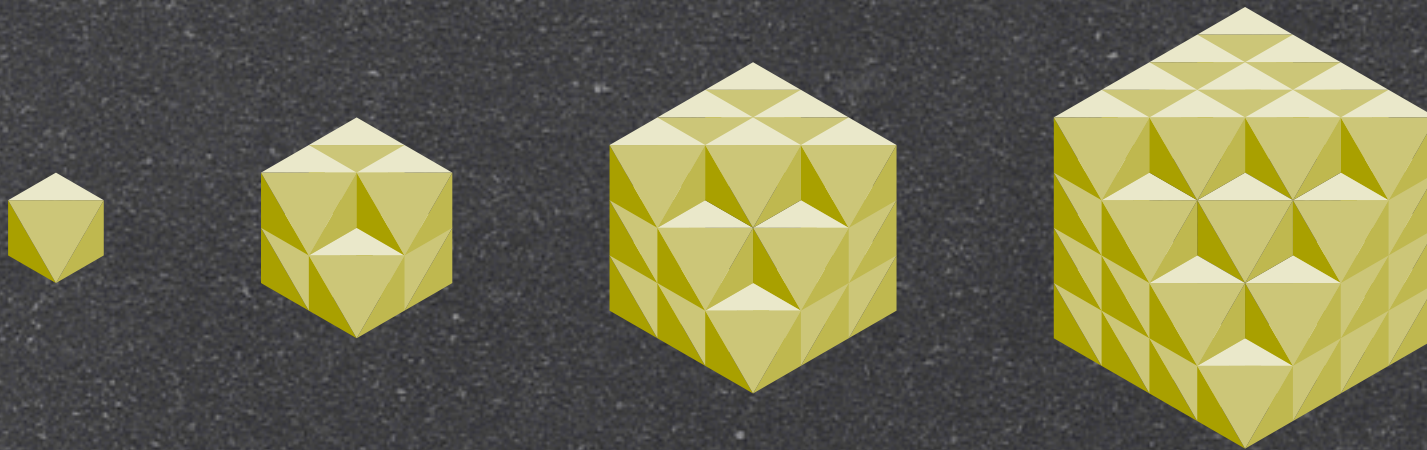


# Simple and compound





# Octahedral series



1

2

3

4

1

6

19

44



# Atomic series

He

Mg

Sr

Ra

2

12

38

88

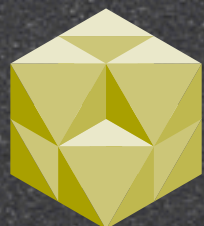




1

He

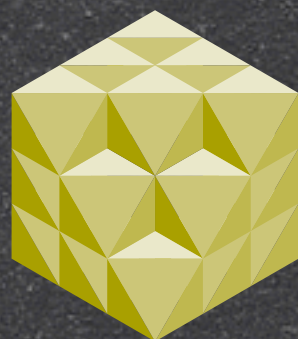
2



6

Mg

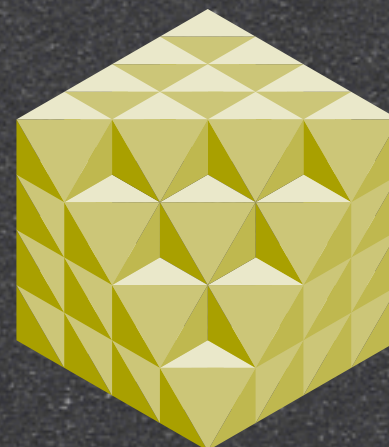
12



19

Sr

38

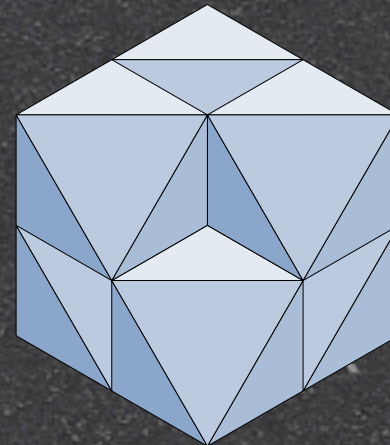
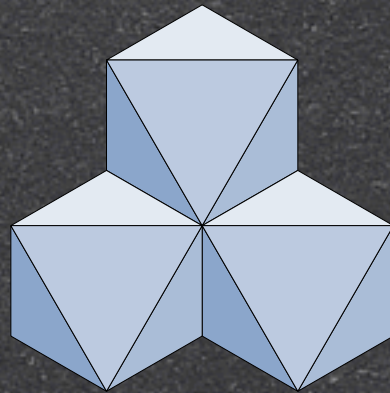
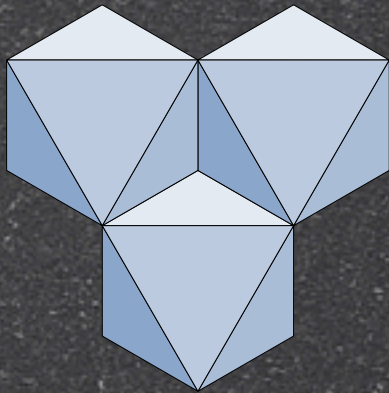


44

Ra

88





H

H

He

1

+

1

=

2



Atoms are  
crystalline  
assemblies of  
identical regular  
octahedra