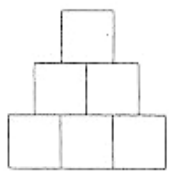
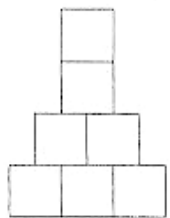


For each pattern find the missing values in the table and create an equation for step n . Explain what each piece of your equation means in terms of the visual patterns.

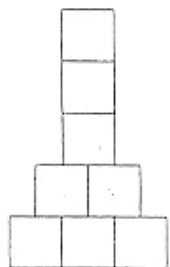
Patterns 1



The building with 1 cube for its tower takes 6 cubes to build.



The building with 2 cubes for its tower takes 7 cubes to build.



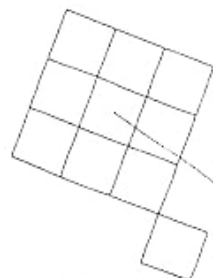
The building with 3 cubes for its tower takes 8 cubes to build.

How many cubes in the building with 10 cubes for its tower?

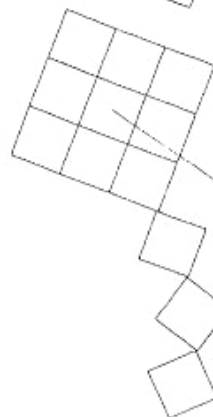
How many cubes in the building with 100 cubes for its tower?

Cubes in Tower	Cubes in All
1	6
2	7
3	8
10	
100	
n	

Patterns 2



A kite with 1 cube for its tail takes 10 cubes to build.



A kite with 2 cubes for its tail takes 11 cubes to build.



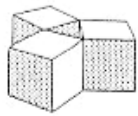
A kite with 3 cubes for its tail takes 12 cubes to build.

How many cubes to build a kite with 10 cubes for its tail?

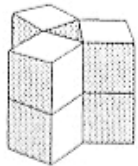
How many cubes to build a kite with 100 cubes for its tail?

Cubes in Tail	Cubes in All
1	10
2	11
3	12
10	
100	
n	

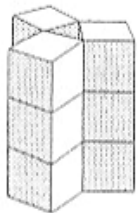
Patterns 3



A space house with 1 floor takes 3 cubes to build.



A space house with 2 floors takes 6 cubes to build.



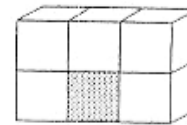
A space house with 3 floors takes 9 cubes to build.

How many cubes to build a space house with 10 floors?

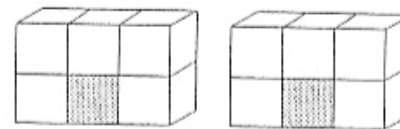
How many cubes to build a space house with 100 floors?

Floors	Cubes
1	3
2	6
3	9
10	
100	
n	

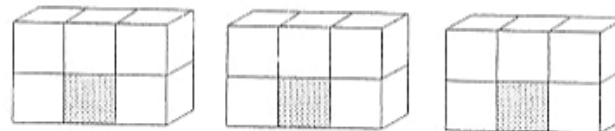
Patterns 4



1 blue car, 5 cubes for the carport.



2 blue cars, 10 cubes for the carports.



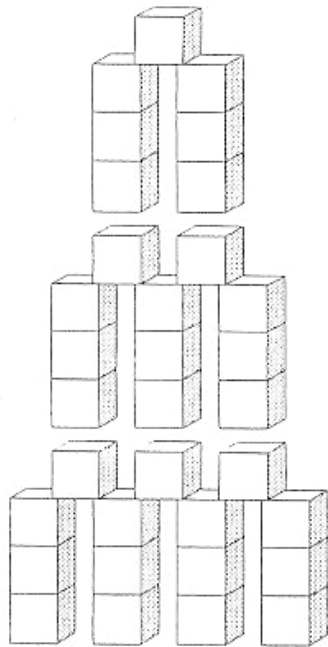
3 blue cars, 15 cubes for the carports.

How many cubes for the carports when there are 10 cars?

How many cubes for the carports when there are 100 cars?

Cars	Cubes in Carports
1	5
2	10
3	15
10	
100	
n	

Patterns 7



1 arch takes 7 cubes to build.

2 arches take 11 cubes to build.

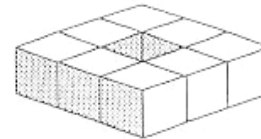
3 arches take 15 cubes to build.

How many cubes to build 10 arches?

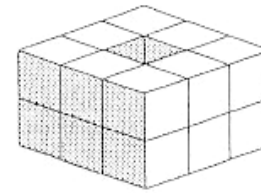
How many cubes to build 100 arches?

Arches	Cubes
1	7
2	11
3	15
10	
100	
n	

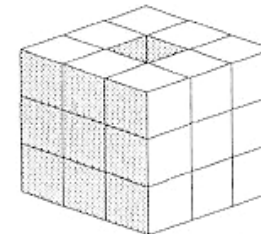
Patterns 5



A well with 1 layer takes 8 bricks.



A well with 2 layers takes 16 bricks.



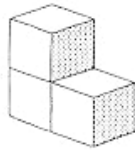
A well with 3 layers takes 24 bricks.

How many bricks to make a well with 10 layers?

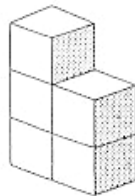
How many bricks to make a well with 100 layers?

Layers	Bricks
1	8
2	16
3	24
10	
100	
n	

Patterns 9



The chair 2 cubes tall takes 3 cubes to build.



The chair 3 cubes tall takes 5 cubes to build.



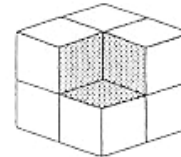
The chair 4 cubes tall takes 7 cubes to build.

How many cubes to build a chair 10 cubes tall?

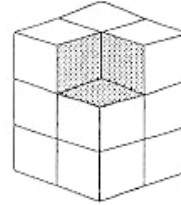
How many cubes to build a chair 100 cubes tall?

Height of Chair	Cubes
2	3
3	5
4	7
10	
100	
n	

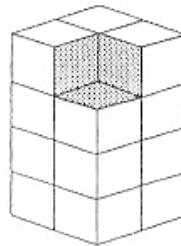
Patterns 10



The apartment building 2 stories tall takes 7 cubes to build.



The apartment building 3 stories tall takes 11 cubes to build.



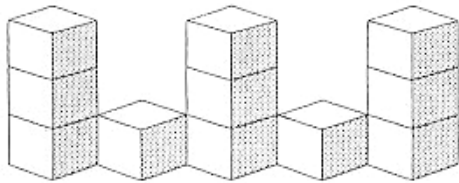
The apartment building 4 stories tall takes 15 cubes to build.

How many cubes to build the apartment building 10 stories tall?

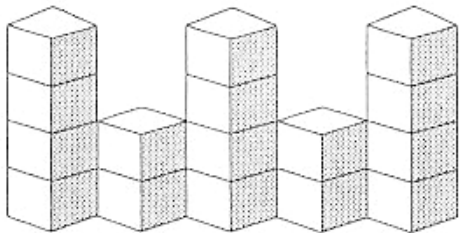
How many cubes to build the apartment building 100 stories tall?

Stories	Cubes
2	7
3	11
4	15
10	
100	
n	

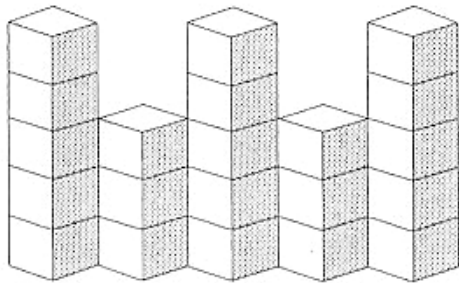
Patterns 11



The shopping plaza with towers 3 stories tall takes 11 cubes to build.



The shopping plaza with towers 4 stories tall takes 16 cubes to build.



The shopping plaza with towers 5 stories tall takes 21 cubes to build.

How many cubes to build the shopping plaza with towers 10 stories tall?

How many cubes to build the shopping plaza with towers 100 stories tall?

Stories in Tower	Cubes
3	11
4	16
5	21
10	
100	

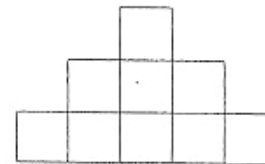
Patterns 12



The 1st staircase takes 1 cube to build.



The 2nd staircase takes 4 cubes to build.



The 3rd staircase takes 9 cubes to build.

How many cubes to build the 10th staircase?

How many cubes to build the 100th staircase?

Staircase	Cubes
1st	1
2nd	4
3rd	9
10th	
100th	