

1 RULES FOR PATTERNS

1 Find an expression for the n th term of these sequences.

a



1 diamond
4 lines



2 diamonds
7 lines



3 diamonds
10 lines

Number of diamonds	1	2	3	4	5	6	7	8
Number of lines	4	7	10					

b



1 wing
7 lines



2 wings
12 lines



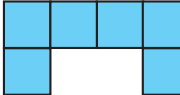
3 wings
17 lines

Number of wings	1	2	3	4	5	6	7	8
Number of lines	7	12	17					

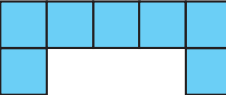
c



1 lane bridge
5 squares



2 lane bridge
6 squares



3 lane bridge
7 squares

Number of lanes	1	2	3	4	5	6	7	8
Number of squares	5	6	7					

d



Tree 1
4 lines



Tree 2
6 lines



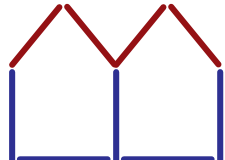
Tree 3
8 lines

Number of trees	1	2	3	4	5	6	7	8
Number of lines	4	6	8					

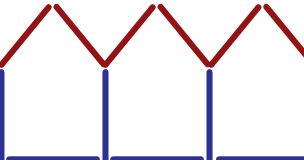
e



1 house
5 lines



2 houses
9 lines



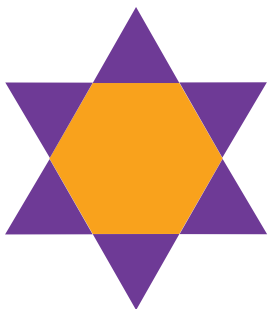
3 houses
13 lines

Number of houses	1	2	3	4	5	6	7	8
Number of lines	5	9	13					

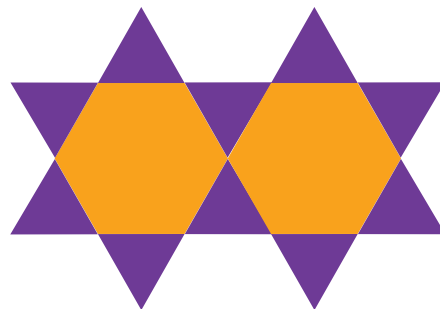
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- 2 Find how many of **each colour** shape are needed for the 10th design.
Show how you worked out the answer.

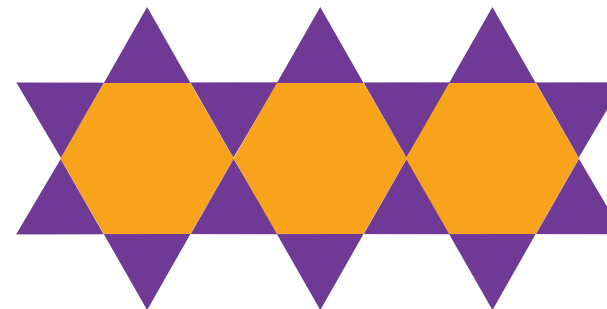
a



Design 1
1 hexagon
6 triangles

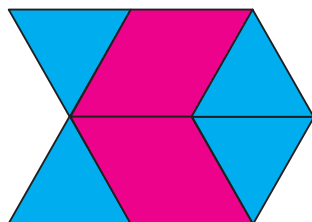


Design 2
2 hexagons
10 triangles

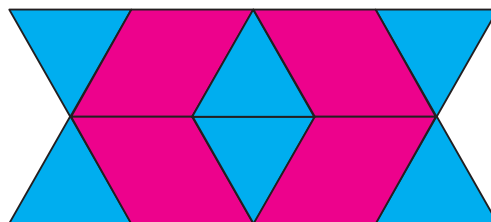


Design 3
3 hexagons
14 triangles

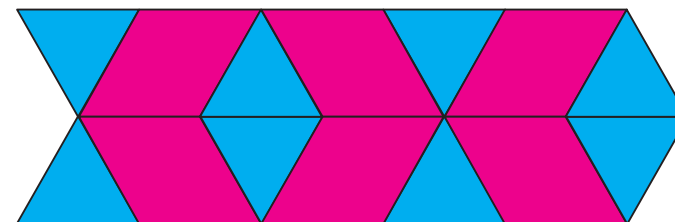
b



Design 1
4 triangles
2 rhombuses



Design 2
6 triangles
4 rhombuses



Design 3
8 triangles
6 rhombuses