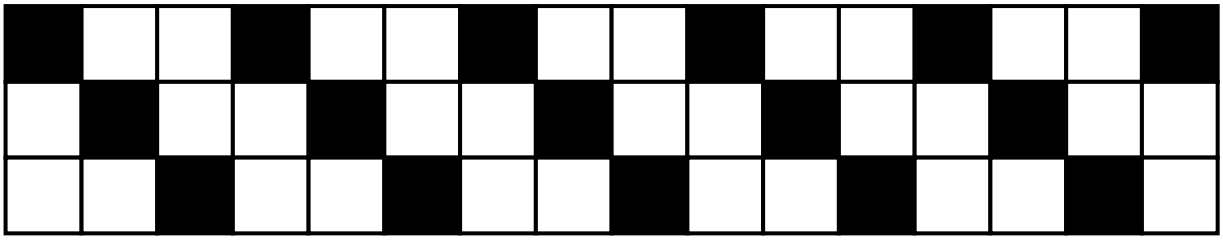
1. Here is a pattern of squares.

a. How many black tiles to white tiles are there? …….

b. What is the proportion of black tiles in the strip? …….

c. What is the proportion of white tiles in the strip? …….

2. Here is a pattern of squares.

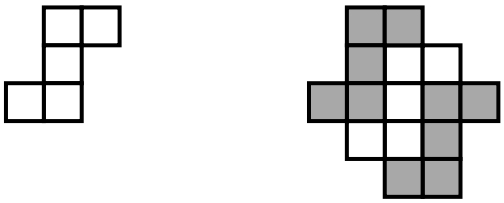


a. How many black tiles to white tiles are there? …….

b. What is the proportion of black tiles in the strip? …….

c. What is the proportion of white tiles in the strip? …….

3. Here are two shapes:

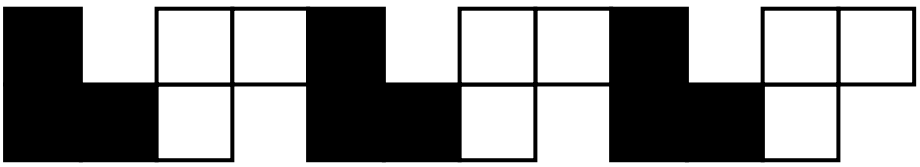


How many times bigger is the larger shape than the smaller shape? …….

What fraction of **the two shapes together** is the smaller shape? ……

Name:

1. Here is pattern of squares.



How many black and how many white squares are there? …….

What is the proportion of white squares in the whole pattern? …….

2. Here is a pattern of circles.

Complete these sentences:

For every black circle there are ……. white circles.

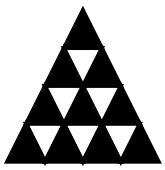
The proportion of black circles in the whole pattern is ……..

The proportion of white circles in the whole pattern is ……..

The number of white circles is ……. the number of black circles.

The number of black circles is …….the number of white circles.

3. Here is a pattern of triangles.



What is the proportion of white triangles to black triangles? …….

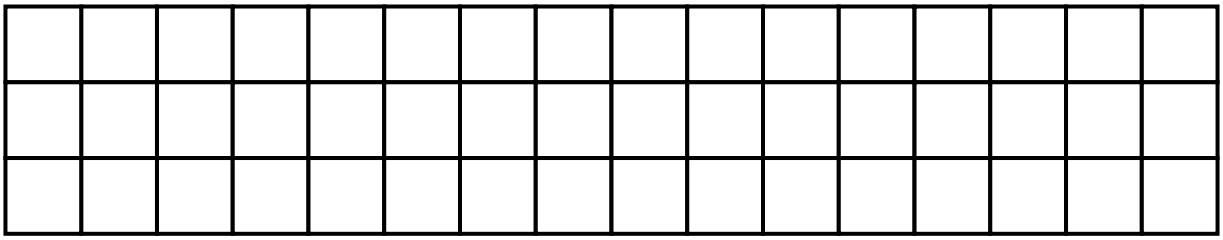
Here are some shape patterns. Copy them onto squared paper and then colour them according to the rule underneath.

The first one has been done for you.

1.

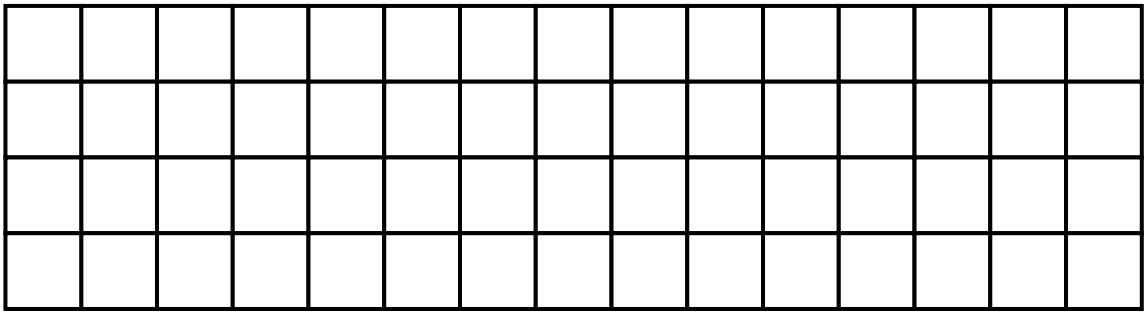
Colour one black square for every two white squares.

2.



Colour two red squares for every one green square.

3.



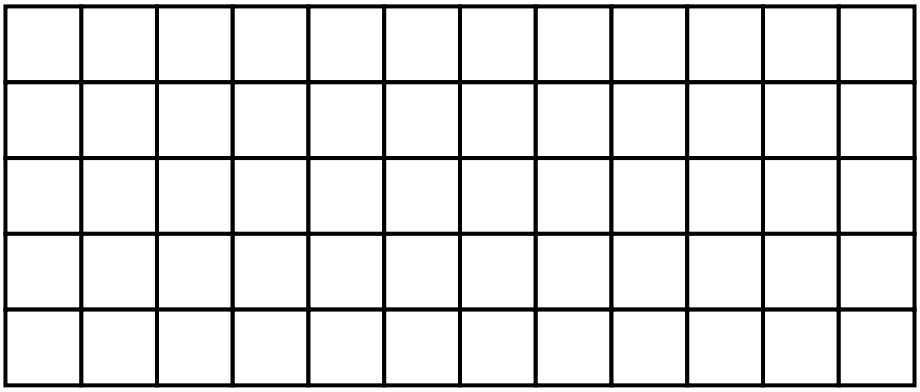
Colour one blue square for every three red squares.

Here are some shape patterns. Copy them onto squared paper and then colour them according to the rule underneath.

1.

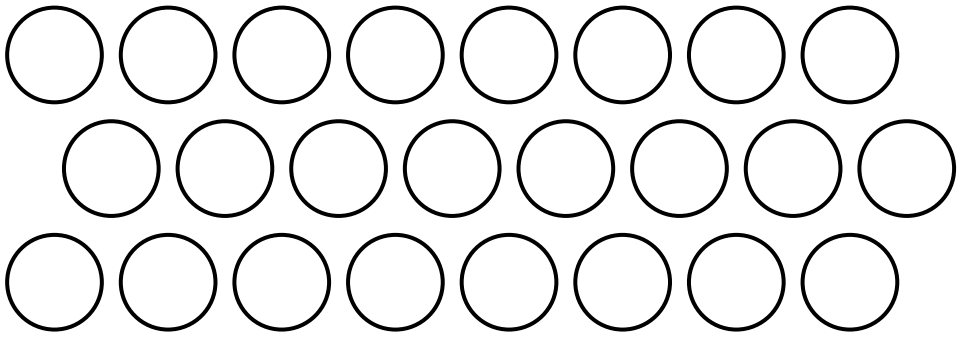
Colour two blue squares for every five green squares.

2.



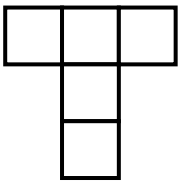
Colour five orange squares for every seven purple squares.

3.

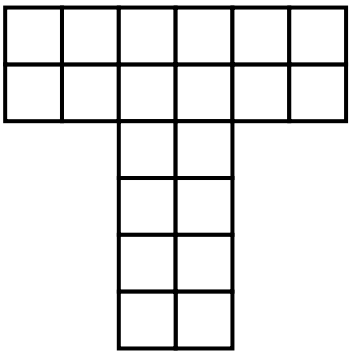


Colour two red circles to every four green circles.

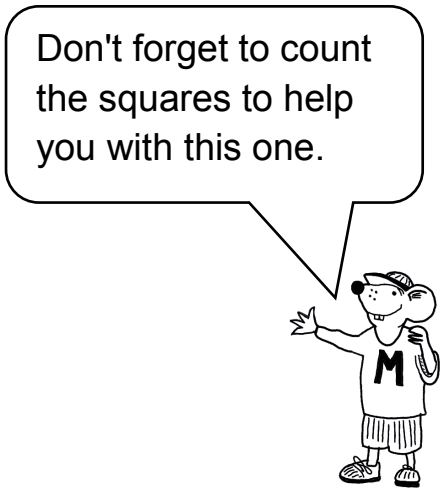
1.



Shape A



Shape B



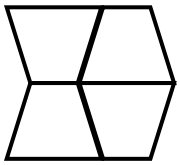
How many times is Shape B bigger than Shape A ? …….

How many squares are there in Shape B for each square in Shape A ? …….

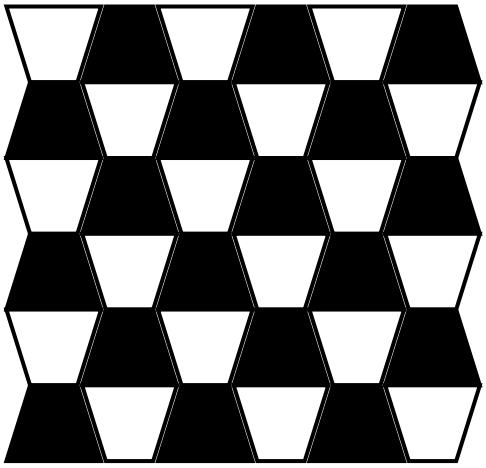
Imagine the two shapes put together.
What proportion of the new shape is Shape A ? …….

What proportion of the new shape is Shape B ? …….

2.



Shape A



Shape B

How many times is Shape A smaller than Shape B ? …….

How many trapeziums are there in Shape B for each trapezium in Shape A ? …….

What proportion of trapeziums in Shape B are black? …….

What proportion are white? …….

Name:

Answers

Page 1

1. **a.** One to every three. **b.** $^1/_4$ **c.** $^3/_4$
2. **a.** One to every two. **b.** $^1/_3$ **c.** $^2/_3$
3. Three times bigger. $^1/_4$

Page 2

1. 9 black, 9 white. $^1/_2$
2. For every black circle there are **two** white circles.
   The proportion of black circles in the whole pattern is $^{\mathbf{1}}/_{\mathbf{3}}$
   The proportion of white circles in the whole pattern is $^{\mathbf{2}}/_{\mathbf{3}}$
   The number of white circles is **twice** the number of black circles.
   The number of black circles is **half** the number of white circles.
3. For every 6 white triangles there are 10 black triangles. 6/10 or 3/5

Pages 3 and 4

Any patterns that conform to the rules are acceptable.

Page 5

1. 4. 4. $^1/_5$ $^4/_5$
2. 9 . 9. $^1/_2$ $^1/_2$