Interpret maps using scale factors and ratios

1 Match the statements on the left with the ratios on the right.

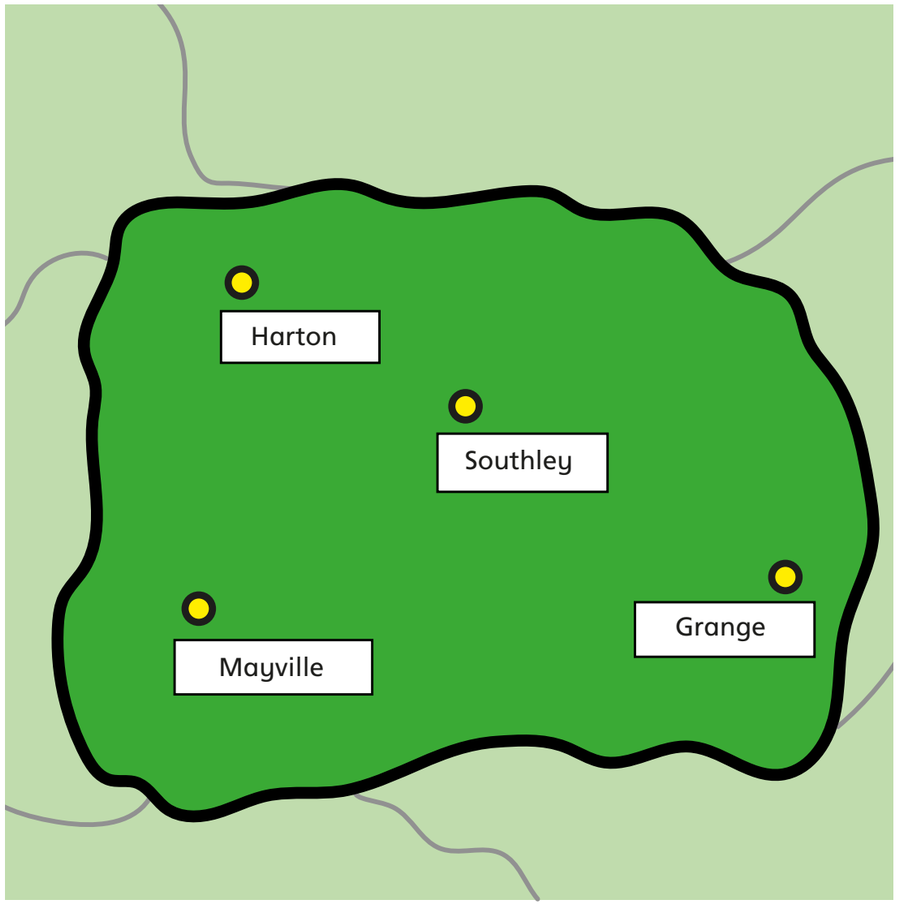
1 cm represents 2 cm	1 : 5
1 cm represents 5 cm	2 : 1
1 cm represents 50 cm	1 : 2
1 cm represents 0.5 cm	1 : 50

2 Match the statements on the left with the ratios on the right.

1 cm represents 1 m	1 : 500
1 cm represents 5 m	1 : 100,000
1 cm represents 1 km	1 : 100
1 cm represents 500 m	1 : 50,000

3 This map shows four towns.

The scale of the map is: 1 cm represents 30 miles.



Complete the table showing the distances between the towns.

	Harton	Mayville	Southley	Grange
Harton				
Mayville				
Southley				
Grange				

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4 A map is drawn to a scale of 1: 20,000

a) Complete the sentences.

1 cm represents 20,000 cm

So 2 cm represents 40,000 cm

40,000 ÷ 100 = ☐

So 2 cm represents ☐ m

1 cm represents 20,000 cm

So 5 cm represents ☐ cm

☐ ÷ 100 = ☐

So 5 cm represents ☐ m

This is the same as ☐ km.

b) What distance on the map would represent an actual distance of 2 km?

☐

c) Two towns are 15 cm apart on the map.

How far apart would the towns be on a map with a scale of 1 : 10,000?

☐

5 Which of these ratios are the same as a scale factor of $\frac{1}{50}$?

Tick your answers.

1 cm represents 0.5 m	☐
4 cm represents 2 m	☐
5 inches represents 250 inches	☐
1 km is represented by 20 m	☐

6 Are these statements always, sometimes or never true?
Explain your answers.

On a map with a scale of 1 : 20,000, a given distance is represented by a line twice the length of the corresponding line on a 1 : 40,000 map.

A map has a scale where 1 cm represents 1 km.
This is the same as 1 : 1,000

If the scale factor of a drawing is greater than 1, then the drawing is larger than the actual object.

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