

Data sheet

Steep hill road signs

Some of the signs used on Britain's roads give advance warning of steep hills.



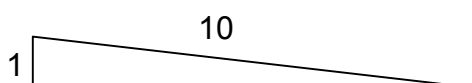
The sign is a red triangle (as are all road warning signs) with a slope going up or down, and a numerical expression.

If the road goes downhill, the slope on the sign goes down from left to right.
If the road goes uphill, the slope on the sign goes up from left to right.

The approximate gradient of the slope is shown on the sign, either

- as a percentage, such as 10% or 14%, or
- as a ratio, for example 1 : 7 (written as 1 in 7 on older signs)

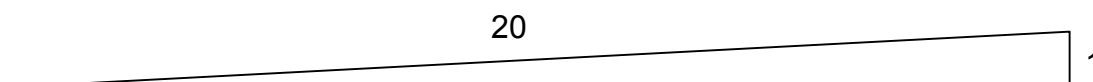
A gradient of 1:10 (1 in 10) means that for every 10 metres of forward travel on the hill, the height changes by about one metre.



One tenth is 10%, so the sign above is for a 1 in 10 downhill slope.

A hill of 1 : 20 means that there will be a change in height of one metre for every 20 metres of forward travel.

One twentieth is 5%, so a gradient of 5% indicates a 1 in 20 slope.



Questions

Steep hill road signs

1



(a) Does this sign indicate that the road will be going downhill or uphill?

(b) The slope following this sign is 200 metres long.
Approximately how much change in height will there be from the start to the finish of the slope?

2

Here is a photograph of another sign.



Which of these ratios is approximately equivalent to a gradient of 17% ?
Put a ring around the correct answer.

1 : 17

1 : 8

1 : 7

1 : 6

1 : 5

3

An old sign which shows the gradient as “1 in 25” is going to be replaced by a new sign.

What percentage should be written on the new sign?

4

Here are the gradients of some hills, as shown on road signs.

18%

1 in 7

10%

1 : 12

12%

(a) Which one is the steepest?

(b) Which one is the least steep?

5

A road that is 1 km long drops in height by 250m.

Complete the two possible signs for the slope

