

Scale and Scale Drawing

ANSWER IN YOUR EXERCISE BOOK

Maps, plans and models have the same **shape** as the original figure but they are enlarged or reduced in size. They are drawn to scale, and are said to be **in proportion** to the original figure.

Some examples

- The street maps in the Rockhampton telephone directory have a scale of 1 mm to 20 m. This means that each millimeter on the map represents 20 m in actual distance.
- A scale model of an airplane has a scale of 1:50. This means that a length of 1 millimetre on the model represents 50 millimetres in actual length.

The scale can be found as follows: $scale = \frac{original\ length}{drawing\ length}$

Scale can be shown in three ways:

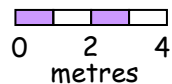
Comparing the corresponding measurements

1 cm to 2 m

As the ratio of drawing length : actual length

1 : 200

As a number line drawn to scale:



Express each scale as a ratio.

1. 1 cm to 1 m 2. 1 mm to 2 m 3. 1 cm to 100 m 4. 1 cm to 1 km

Express each scale by writing the corresponding measurements

5. Write 1 : 100 as 1 cm to _____ m 6. Write 1 : 200 as 1 cm to _____ m
 7. Write 1 : 1000 as 1 mm to _____ m 8. Write 1 : 500 as 1 cm to _____ m

Measure the scales. Then write the scales as ratios.

9. 10. 11. 12.

If the scale is 1:1000, what actual length is shown by these drawing lengths?

13. 1 cm 14. 5 cm 15. 20 mm 16. 4 km

If the scale is 1:200, what length would you draw to show these actual lengths?

17. 4 m 18. 30 m 19. 1 km 20. 420 m

Find the scale as a ratio.

21. 1 cm : 1 m 22. 1 cm : 4 m 23. 1 mm : 1 m 24. 1 mm : 200 m