

Map Scales

The distance between two towns on a map is 8 cm.
The map scale is 1:14,000. What is the actual distance in kilometers?

As the 1 in the ratio represents the map,
we multiply when trying to find the actual distance
 $8 \text{ cm} \times 14,000 = 112,000 \text{ cm}$
Divide by 100 to convert to meters
 $112,000 \div 100 = 1,120 \text{ m}$
Divide by 1000 to convert to kilometers
 $1,120 \div 1000 = 1.12 \text{ km}$

A hiking trail is 4.2 km long in real life. On a map with a scale of 1:36,000,
how many centimeters long will the trail appear on the map?

As the 36,000 represent the actual distance,
we divide when trying to find the map distance
 $4.2 \text{ km} \div 36,000 = 0.00042 \text{ km}$
Multiply by 1000 to convert to meters
 $0.00042 \times 1000 = 0.42 \text{ m}$
Multiply by 100 to convert to centimeters
 $0.42 \text{ m} \times 100 = 42 \text{ cm}$

1. On a map with a scale of 1 : 18,000, a walking path is shown as 7 cm long. What is the actual distance in kilometers?
The actual distance is _____ km.
2. A nature trail is 3.2 km long in real life. On a map with a scale of 1 : 30,000, how long will it appear in centimeters?
The nature trail is _____ cm on the map.
3. A river section measures 4.6 cm on a map with a scale of 1 : 42,000. Find the real-world distance.
The actual distance is _____ km.
4. The real distance between two towns is 5.7 km. If the map scale is 1 : 20,000, what is the map distance?
The distance on the map is _____ cm on the map.
5. A coast segment on a map is 9.8 cm long. The map scale is 1 : 55,000. Calculate the actual distance.
The actual distance is _____ km.
6. A hiking trail is 2.1 km long in real life. On a map with a scale of 1 : 12,000, how many centimeters long is it?
The hiking trail is _____ cm on the map.
7. On a map with a scale of 1 : 60,000, a railway line measures 3.5 cm. How long is it in kilometers in reality?
The actual distance is _____ km.
8. A road in real life stretches 8.4 km. With a map scale of 1 : 25,000, determine the map length in centimeters.
The road is _____ cm on the map.
9. A forest boundary is shown as 6.2 cm long on a map whose scale is 1 : 48,000. Find the actual distance.
The actual distance is _____ km.
10. A real-world hiking loop is 1.75 km long. Using a map scale of 1 : 16,000, what is its map length?
The hiking loop is _____ cm on the map.
11. On a map with a scale of 1 : 70,000, two rivers appear 2.8 cm apart. What is the actual distance?
The actual distance is _____ km.
12. A mountain trail is 6.5 km long in real life. On a map that uses a scale of 1 : 100,000, how long will the trail appear on the map?
The mountain trail is _____ cm on the map.