Scale Drawings with Bearings

ANSWERS

1

The scale of a map is 1 cm to 3 km. (a) A road is 4 cm long on the map. How long is it in real life? (b) A lake is 7.5 km long. How long is it on the map?

(a) $4 \times 3 =$ 12 km

(b) $7.5 \div 3 =$ 2.5 cm

2

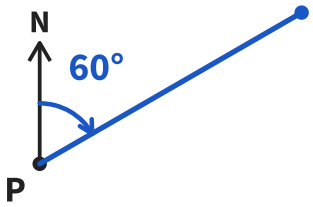
The scale of a map is 1 cm to 5 km. (a) Two villages are 6.5 cm apart on the map. How far apart are they in real life? (b) A canal is 40 km long. How long is it on the map?

(a) 32.5 km

(b) 8 cm

3

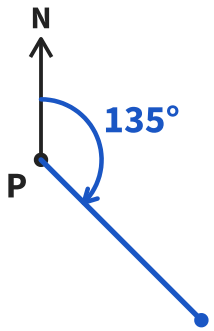
A boat sails 20 km from P on a bearing of 060°. The scale is 1 cm to 5 km. Work out the length of the line, then draw it.



$20 \div 5 =$ 4 cm

4

A plane flies 18 km from P on a bearing of 135°. The scale is 1 cm to 6 km. Draw its route.



Length

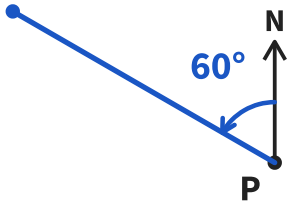
3 cm

Scale Drawings with Bearings

ANSWERS

5

A ship sails 16 km from P on a bearing of 300°. The scale is 1 cm to 4 km. Draw its route.



Length

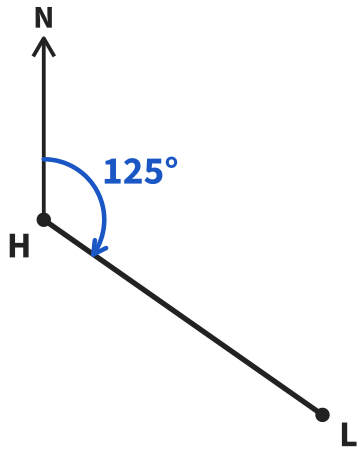
4 cm

Angle anticlockwise from North

60°

6

On this map the scale is 1 cm to 2 km, and HL is 4.5 cm. Measure the bearing of L from H. How far is L from H in real life?



Bearing

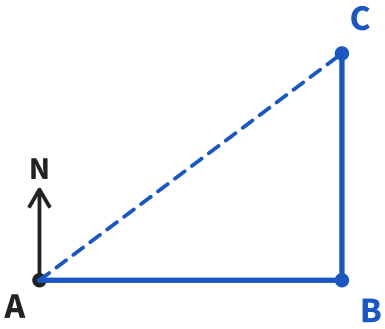
125° (allow 2° either way)

Distance

9 km

7

A walker goes 8 km from A on a bearing of 090° to B, then 6 km on 000° to C. The scale is 1 cm to 2 km. Draw the route. How far is C from A?



AB and BC

4 cm and 3 cm

AC

5 cm, so 10 km

8

A map has a scale of 1 cm to 4 km. A road is 6 cm long on the map. Ella says the road is 1.5 km long. Explain her mistake, then find the real length.

Ella's mistake

She divided. Map to real life: multiply.

Length

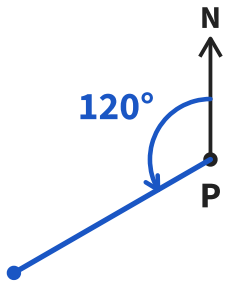
6 × 4 = 24 km

Scale Drawings with Bearings *further practice*

ANSWERS

9

A drone flies 21 km from P on a bearing of 240°. The scale is 1 cm to 7 km. Draw its route.



Length

3 cm

Angle anticlockwise from North

120°

10

A map has a scale of 2 cm to 5 km. Two towns are 6 cm apart on the map. How far apart are they in real life?

Working

6 ÷ 2 = 3, 3 × 5

Distance

15 km

11

On a map, a line 4 cm long stands for 32 km. Complete the scale: 1 cm to ___ km.

Working

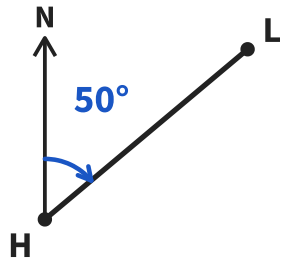
32 ÷ 4

Scale

1 cm to 8 km

12

On this map the scale is 1 cm to 20 km, and HL is 3.5 cm.
Measure the bearing of L from H. Find the real distance, and the bearing of H from L.



L from H

050° (allow 2° either way)

Distance; H from L

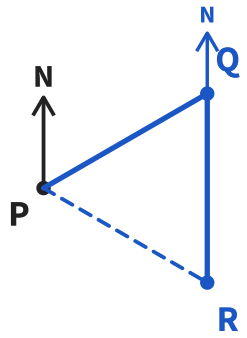
70 km; 230°

Scale Drawings with Bearings *further practice*

ANSWERS

13

A boat sails 10 km from P on a bearing of 060° to Q, then 10 km on 180° to R. The scale is 1 cm to 4 km. Draw the route. How far is R from P?



PQ and QR

2.5 cm

PR

2.5 cm, so 10 km

14

A 30 km road is drawn on map A, at 1 cm to 4 km, and on map B, at 1 cm to 6 km. On which map is the road longer, and by how much?

Lengths

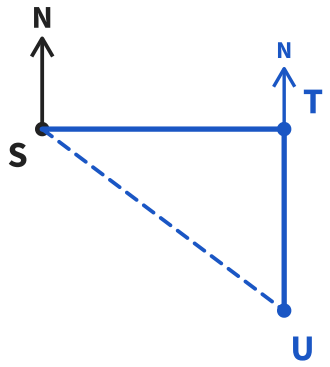
A: 7.5 cm, B: 5 cm

Answer

Map A, by 2.5 cm

15

A race goes 8 km from S on 090° to T, then 6 km on 180° to U, then straight back to S. The scale is 1 cm to 2.5 km. Draw it. How long is the race?



ST and TU

3.2 cm and 2.4 cm

US

4 cm, so 10 km

Total

24 km

16

To draw a bearing of 210°, Ali measures 30° anticlockwise from North. Explain his mistake. What angle should he measure?

Ali's mistake

He took away 180, not 360.

Angle

360° − 210° = 150° anticlockwise