



Scale drawings

GRADE 7 MATH

Name _____

Date _____

Work in order. State the scale factor before you use it; give units. One skill: **scale drawings**.

WORKED EXAMPLE

Lengths multiply by the scale factor **k**. Areas multiply by **k²**. To check an area answer, scale both dimensions and multiply them — you should get the same result, and it shows why the square appears.

1. A path is 5 cm on a 1 : 20 drawing. How long is it really, in centimetres?

FLUENCY

Show your thinking

Answer

2. A field is 12 cm on a 1 : 200 drawing. How long is it in metres?

APPLICATION

Show your thinking

Answer

3. A wall is 6 m long. How long is it on a 1 : 100 drawing, in centimetres?

APPLICATION

Show your thinking

Answer

4. Every length of a shape is multiplied by 2. By what factor is the area multiplied?

FLUENCY

Show your thinking

Answer

5. Every length is multiplied by 5. By what factor is the area multiplied?

APPLICATION

Show your thinking

Answer

6. Every length is halved. By what factor is the area multiplied?

REASONING

Show your thinking

Answer

7. A rectangle is 3 cm by 8 cm. Every length is multiplied by 4. Find the new area.

APPLICATION

Show your thinking

Answer

8. Check question 7 a second way, by scaling each dimension and multiplying.

REASONING

Show your thinking

Answer

9. A student says “the scale factor is 4, so the area is 4 times bigger.” Use your answers to explain precisely what they have confused.

REASONING

Show your thinking

Answer