

Scale Drawings and Similar Figures: math practice, Grade 7 – download the PDF

22 problems graded by difficulty (★ easy, ★★ medium, ★★★ hard). Try first, without looking at the solutions!

1 Drawing to real length

★ ★ ★

A blueprint uses the scale 1 cm : 4 m. A wall measures 6 cm on the blueprint. What is its actual length?

2 Find the scale factor

★ ★ ★

A rectangle is 4 in by 6 in. A copy is 12 in by 18 in. What is the scale factor from the original to the copy?

3 A road map

★ ★ ★

On a map, 1 in represents 10 mi. Two cities are 3.5 in apart on the map. How far apart are they in real life?

4 True or false: angles



Mia says: "If I enlarge a triangle with a scale factor of 2, each angle measure doubles." Is she correct? Explain.

5 Real to drawing



A soccer field is 50 m wide. A drawing uses the scale 1 cm : 5 m. How wide is the field in the drawing?

6 A model car



A model car has the scale 1 : 24. The model is 7 in long. How long is the real car in feet? (1 ft = 12 in)

7 Complete the table



The scale is 1 cm : 3 ft. Copy and complete the table.

Drawing length	Actual length
2 cm	?
5 cm	?
?	45 ft

8

A bedroom floor plan

A floor plan uses the scale 1 in : 4 ft. The bedroom measures 2.5 in by 3 in on the plan.

- Find the actual dimensions.
- Find the actual area.

9

Similar triangles

Triangle ABC has sides 6, 8, and 10. Triangle DEF is similar, and its sides are 9, 12, and a third side x . Find x .

10

Kilometers on a map

A map has the scale 1 cm : 500 m. A trail measures 7.2 cm on the map. How long is the trail in kilometers?

11

Fractional scale

A drawing uses the scale $\frac{1}{4}$ in = 1 ft. A porch measures 3.5 in on the drawing. How long is the porch?

12

Changing the scale

A drawing of a courtyard uses the scale 1 cm : 2 m and measures 8 cm by 5 cm. Redraw it with the scale 1 cm : 4 m. What are the new dimensions?

13

Is it a scale drawing?

A 4 cm by 6 cm rectangle is redrawn as a 6 cm by 8 cm rectangle. Is the second rectangle a scale drawing of the first? Justify.

14 A model of a tower

A tower is 150 m tall. A model uses the scale 1 : 200. How tall is the model in centimeters?

15 Area of an enlargement

A 3 cm by 5 cm rectangle is enlarged with a scale factor of 4.

- Find the area of the original and of the enlargement.
- By what number was the area multiplied?

16 Area of a lake

On a map with the scale 1 cm : 5 km, a lake looks like a rectangle 2.4 cm by 1.5 cm. Find the actual area of the lake.

17 A garden plan

A garden is drawn with the scale 1 cm : 50 cm. Its drawing has an area of 48 cm². Find the actual area in square meters.

18 Find the scale factor from areas

A rectangle has an area of 36 square inches. A scaled copy has an area of 81 square inches. What is the scale factor from the original to the copy? If the original is 9 in by 4 in, give the dimensions of the copy.

19 Photo enlargement



A 4 in by 6 in photo is enlarged so that its shorter side becomes 10 in.

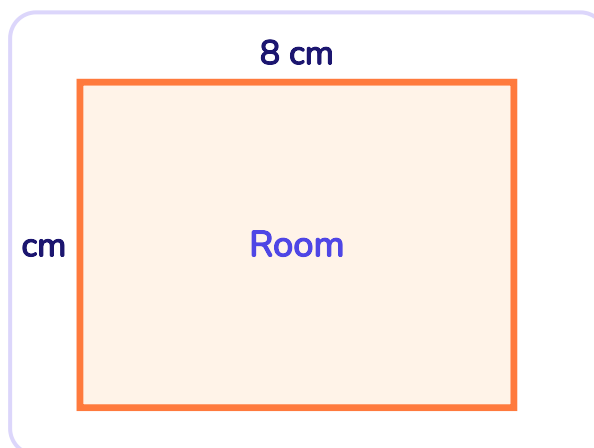
- What is the scale factor?
- How long is the longer side?
- How many times larger is the area of the enlargement?

20 Floor of a model house



The rectangular floor of a model house is 24 cm by 18 cm. The model scale is 1 : 50.

- Find the actual dimensions in meters.
- Find the actual floor area in square meters.



21 Perimeter and area of similar triangles



Triangle ABC is a right triangle with sides 6, 8, and 10. Triangle DEF is similar to ABC with a scale factor of 2.5.

- Find the sides of DEF.
- Compare the perimeters of the two triangles.
- Compare the areas.

22

Which scale is bigger?

★★★

Map X uses the scale 1 cm : 2 km. Map Y uses the scale 1 cm : 5 km. A park is 10 km long. How long is it on each map? Which map shows the park larger, and by what factor?

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