Name: _____ Date: _____ Class: _____

Scale Factor Worksheet

prtutorial.in

The scale factor tells how much a figure is enlarged or reduced. Use the given information to find the missing values. Show your work when needed.

Quick Reminder

If the scale factor is k, then:

- New length = original length × k
- New area = original area × k^2
- New perimeter = original perimeter × k

Example:

Original rectangle: 4 cm × 6 cm
Scale factor: 3
New rectangle: 12 cm × 18 cm

1. Find the missing dimension.

a) A rectangle has length 5 cm and width 3 cm. It is enlarged by a scale factor of 4. What are the new dimensions?

_____

b) A triangle has sides 6 in, 8 in, and 10 in. It is enlarged by a scale factor of 2. What are the new side lengths?

_____

c) A square has side length 7 m. It is reduced by a scale factor of $\frac{1}{2}$. What is the new side length?

_____

d) A rectangle has length 9 cm and width 4 cm. It is reduced by a scale factor of $\frac{3}{4}$. What are the new dimensions?

_____

2. Find the scale factor.

a) A diagram is enlarged from 5 cm to 20 cm. What is the scale factor? _____

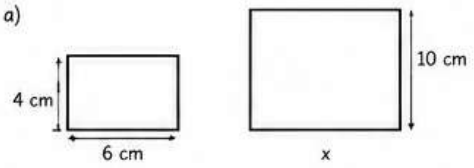
b) A side length is reduced from 12 cm to 6 cm. What is the scale factor? _____

c) A side length is enlarged from 7 m to 28 m. What is the scale factor? _____

d) A side length is reduced from 18 cm to 9 cm. What is the scale factor? _____

3. Find the missing length.

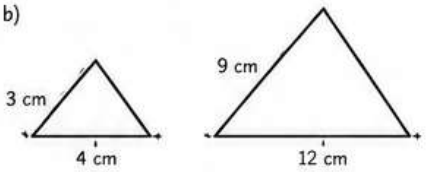
a)



The two rectangles are similar. What is the value of x?

_____

b)



The two triangles are similar. What is the value of the missing side?

_____

4. Find the missing side length or area.

a) A rectangle with length 8 m and width 5 m is enlarged by a scale factor of 3. What is the new area?

_____

b) A triangle with base 12 cm and height 7 cm is reduced by a scale factor of $\frac{1}{3}$. What is the new area?

_____

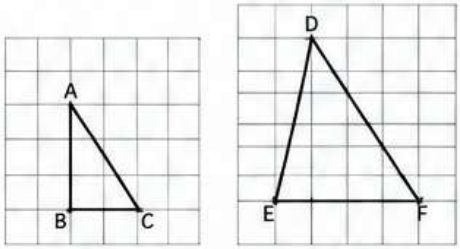
c) A square with side length 10 in is enlarged by a scale factor of 5. What is the new perimeter?

_____

d) A rectangle with length 15 m and width 9 m is reduced by a scale factor of $\frac{2}{5}$. What are the new dimensions?

_____

5. Use the grid to find the scale factor.



Small triangle Larger triangle

What is the scale factor from △ABC to △DEF?

_____

6. Find the missing value.

a) A figure has a perimeter of 24 cm. It is enlarged by a scale factor of 3. What is the new perimeter?

_____

b) A figure has an area of 36 m^2. It is reduced by a scale factor of $\frac{1}{3}$. What is the new area?

_____

c) The length of a side is 14 cm. It is enlarged by a scale factor of 5. What is the new length?

_____

d) The area of a square is 64 in^2. It is reduced by a scale factor of $\frac{1}{4}$. What is the new area?

_____

7. Real-world problems.

a) A photo is enlarged by a scale factor of 6. If the original width was 4 cm, what is the new width? _____

b) A map has a scale factor of 1/500,000. A distance of 8 cm on the map represents a real distance of how many kilometers?

_____

c) A model car is 12 cm long. The real car is 36 cm long. What is the scale factor from the model to the real car?

_____

8. Challenge.

a) A rectangle has length 9 cm and width 6 cm. It is enlarged by a scale factor of $\frac{7}{3}$. What is the new perimeter?

_____

b) A triangle has side lengths 5 cm, 12 cm, and 13 cm. It is reduced by a scale factor of $\frac{2}{5}$. What is the new area of the triangle?

_____

c) A square has area 49 m^2. It is enlarged by a scale factor of 4. What is the new side length?

_____