LESSON MAKER PRO

Scale It Up

Use corresponding sides to solve dilation problems.

GRADE 8 · TEKS 8.3.A

8.3.A "generalize that the ratio of corresponding sides of similar shapes are proportional, including a shape and its dilation;"

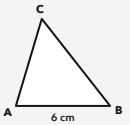
NAME _____ DATE _____

MATCHING SIDE RATIOS

A dilation multiplies every side length by the same scale factor. For corresponding sides, image length/original length equals the scale factor. A factor less than 1 makes a smaller image, and a factor greater than 1 makes a larger image.

WORKED EXAMPLE

Triangle ABC is shown. It is dilated by a scale factor of 3 to form triangle A'B'C'. What is the length of A'B'?

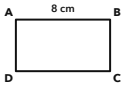


1. Side AB is 6 cm in the figure.
2. Multiply by the scale factor: 6 × 3 = 18.
3. A'B' is 18 cm.

Answer: 18 cm

PRACTICE 6 problems

1 The rectangle shown is dilated by a scale factor of 1/2. What is the length of A'B'?



ANSWER _____

2 A side of a figure is 12 cm long. Its corresponding side in a dilated image is found using a scale factor of 7/4. Find the image side length.

ANSWER _____

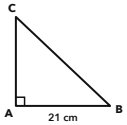
3 A dilated image has a corresponding side length of 20 cm. The scale factor from the original to the image is 5/2. Find the original side length.

ANSWER _____

4 A small triangle has a side length of 14 cm. The matching side of a larger similar triangle is 35 cm. Find the scale factor from the small triangle to the large triangle.

ANSWER _____

5 The right triangle shown is dilated by a scale factor of 4/7. What is the length of A'B'?



ANSWER _____

6 A smaller similar polygon has corresponding side lengths of 16 cm and 24 cm. A larger polygon has matching side lengths of 28 cm and x cm. Find x.

ANSWER _____

APPLY IT Show your work

1 A student makes a profile logo for a video channel. The original logo is 16 mm wide. She enlarges the logo with a scale factor of 5/4. How wide is the enlarged logo?

WORK SPACE

ANSWER _____

2 A gaming club shrinks a 28 cm-wide banner design so it will fit on a folder. The scale factor is 5/7. What is the width of the smaller design?

WORK SPACE

ANSWER _____

CHALLENGE One step up

A triangle has side lengths 16 cm, 28 cm, and 40 cm. A second triangle has corresponding side lengths 20 cm, 35 cm, and x cm. Is the second triangle a dilation of the first triangle? Find x and explain your reasoning.

WORK SPACE AND ANSWER

ANSWER KEY

Scale It Up

GRADE 8 · TEKS 8.3.A

PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	The rectangle shown is dilated by a scale factor of 1/2. What is the length of A'B'?	**4 cm**
2	A side of a figure is 12 cm long. Its corresponding side in a dilated image is found using a scale factor of 7/4. Find the image side length.	**21 cm**
3	A dilated image has a corresponding side length of 20 cm. The scale factor from the original to the image is 5/2. Find the original side length.	**8 cm**
4	A small triangle has a side length of 14 cm. The matching side of a larger similar triangle is 35 cm. Find the scale factor from the small triangle to the large triangle.	**5/2**
5	The right triangle shown is dilated by a scale factor of 4/7. What is the length of A'B'?	**12 cm**
6	A smaller similar polygon has corresponding side lengths of 16 cm and 24 cm. A larger polygon has matching side lengths of 28 cm and x cm. Find x.	**42 cm**

PART 2 · APPLY IT

1. **20 mm** Multiply the original width by the scale factor: 16 × 5/4 = 20.
2. **20 cm** Multiply the original width by the scale factor: 28 × 5/7 = 20.

CHALLENGE

Yes. x = 50 cm because 20/16 = 35/28 = 5/4, and 40 × 5/4 = 50.

Accept equivalent forms of scale factors, such as 5/2 or 2.5. Require units for all side-length answers.