LESSON MAKER PRO

Scale, Slide, Match

Use transformations and scale factors to compare figures.

GRADE 8 · 8.G.A

CCSS.Math.Content.8.G.A "Understand congruence and similarity using physical models, transparencies, or geometry software."

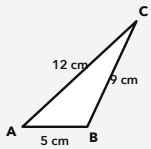
NAME _____ DATE _____

MATCH THE FIGURES

Similar figures have matching angles and side lengths multiplied by one scale factor. Congruent figures can be matched by slides, turns, or flips, and their scale factor is 1.

WORKED EXAMPLE

Triangle ABC in the figure is similar to triangle DEF. AB corresponds to DE, and DE = 20 cm. Find EF.



1. AB = 5 cm and DE = 20 cm.
2. Scale factor = 20/5 = 4.
3. EF = 9 × 4 = 36 cm.

Answer: 36 cm

PRACTICE 4 problems

1 Triangle ABC is congruent to triangle DEF. AB = 14 cm. Find DE.

ANSWER _____

2 A dilation centered at the origin has scale factor 3. Point (2, -7) maps to what point?

ANSWER _____

3 Triangle PQR has side lengths 8 cm, 11 cm, and 13 cm. Triangle XYZ has matching side lengths 24 cm, 33 cm, and 39 cm. What scale factor maps PQR to XYZ?

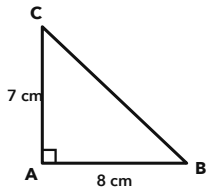
ANSWER _____

4 A reflection across the y-axis maps (-6, 2) to what point?

ANSWER _____

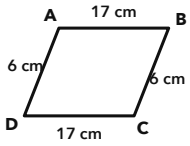
APPLY IT Show your work

1 A skate shop makes a full ramp similar to the model in the figure. The full base DE is 24 cm and corresponds to AB. Find full height DF, which corresponds to AC.



ANSWER _____

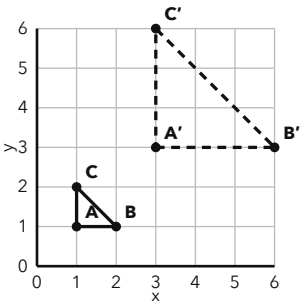
2 A gaming club copies the sticker in the figure using only slides, turns, and flips. What is the perimeter of the copied sticker?



ANSWER _____

CHALLENGE One step up

The solid triangle maps to the dashed triangle. Is the mapping congruence or similarity? State the scale factor and explain using the coordinates.



WORK SPACE AND ANSWER

ANSWER KEY # Scale, Slide, Match

GRADE 8 · 8.G.A

PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	Triangle ABC is congruent to triangle DEF. AB = 14 cm. Find DE.	**14 cm**
2	A dilation centered at the origin has scale factor 3. Point (2, -7) maps to what point?	**(6, -21)**
3	Triangle PQR has side lengths 8 cm, 11 cm, and 13 cm. Triangle XYZ has matching side lengths 24 cm, 33 cm, and 39 cm. What scale factor maps PQR to XYZ?	**3**
4	A reflection across the y-axis maps (-6, 2) to what point?	**(6, 2)**

PART 2 · APPLY IT

1. **21 cm** The scale factor is 24/8 = 3. Multiply the model height: 7 × 3 = 21 cm.
2. **46 cm** Slides, turns, and flips preserve side lengths. Add the four side lengths: 17 + 6 + 17 + 6 = 46 cm.

CHALLENGE

Similarity, not congruence. The scale factor is 3 because each image coordinate is 3 times the matching original coordinate.

Accept equivalent coordinate notation and units where appropriate. For the challenge, accept a correct explanation that all corresponding lengths are multiplied by 3.