

Side Match Mission

Use vertex order to match sides in similar figures.

GRADE 7 • 7.MG.2.b

7.MG.2.b "Identify corresponding sides of similar quadrilaterals and triangles."

NAME _____

DATE _____

FOLLOW THE ORDER

Similar figures have the same shape, and their matching angles and sides are in the same relative positions. In a similarity statement, read the vertices in order. Then match the endpoints of a side to find its corresponding side.

WORKED EXAMPLE

Triangle LMP ~ triangle RST. LM = 5, MP = 7, and PL = 9. Which side corresponds to MP?

1. The vertex matches are L to R, M to S, and P to T.
2. Side MP uses vertices M and P.
3. M matches S, and P matches T, so MP corresponds to ST.

Answer: ST

PRACTICE 6 problems

- 1 Triangle JKL ~ triangle MNP. Which side corresponds to JK?

ANSWER _____

- 2 Quadrilateral WXYZ ~ quadrilateral ABCD. Which side corresponds to YZ?

ANSWER _____

- 3 Triangle GHI ~ triangle QRS. GH = 4 cm and QR = 12 cm. Name the corresponding pair and the scale factor from triangle GHI to triangle QRS.

ANSWER _____

- 4 Quadrilateral EFGH ~ quadrilateral KLMN. EF = 4 cm and KL = 16 cm. Name the corresponding pair and the scale factor from EFGH to KLMN.

ANSWER _____

- 5 Triangle TUV is similar to triangle XYZ. TU corresponds to XY, and UV corresponds to YZ. Which side corresponds to VT?

ANSWER _____

- 6 Quadrilateral PQRS ~ quadrilateral WXYZ. Name the side in WXYZ that corresponds to QR and the side that corresponds to SP.

ANSWER _____

APPLY IT Show your work

1

A gaming club makes a large triangular banner ABC and a smaller similar banner DEF. Triangle ABC $\sim$ triangle DEF. On the large banner, AB = 14 cm. On the smaller banner, DE = 21 cm. Which side of the smaller banner matches AB? What is the scale factor from the large banner to the smaller banner?

WORK SPACE

ANSWER _____

2

A dance team designs a large four-sided video border WXYZ and a smaller similar border JKLM. Quadrilateral WXYZ $\sim$ quadrilateral JKLM. WX = 18 cm, JK = 12 cm, and XY = 27 cm. Which side of the smaller border matches XY? How long is that side?

WORK SPACE

ANSWER _____

CHALLENGE One step up

CHALLENGE

Quadrilateral ABCD has side lengths AB = 12 cm, BC = 16 cm, CD = 20 cm, and DA = 24 cm. A similar quadrilateral PQRS has side lengths PQ = 30 cm, QR = 24 cm, RS = 18 cm, and SP = 36 cm. Match each side of ABCD with its corresponding side of PQRS. Explain how one scale factor supports all four matches.

PART 1 • PRACTICE

#	PROBLEM	ANSWER
1	Triangle JKL ~ triangle MNP. Which side corresponds to JK?	MN
2	Quadrilateral WXYZ ~ quadrilateral ABCD. Which side corresponds to YZ?	CD
3	Triangle GHI ~ triangle QRS. GH = 4 cm and QR = 12 cm. Name the corresponding pair and the scale factor from triangle GHI to triangle QRS.	GH ↔ QR; scale factor 3
4	Quadrilateral EFGH ~ quadrilateral KLMN. EF = 4 cm and KL = 16 cm. Name the corresponding pair and the scale factor from EFGH to KLMN.	EF ↔ KL; scale factor 4
5	Triangle TUV is similar to triangle XYZ. TU corresponds to XY, and UV corresponds to YZ. Which side corresponds to VT?	ZX
6	Quadrilateral PQRS ~ quadrilateral WXYZ. Name the side in WXYZ that corresponds to QR and the side that corresponds to SP.	QR ↔ XY; SP ↔ ZW

PART 2 • APPLY IT

- DE; scale factor $\frac{3}{2}$** AB is the first side in triangle ABC, so it corresponds to DE, the first side in triangle DEF. The scale factor is $\frac{21}{14} = \frac{3}{2}$.
- KL; 18 cm** XY corresponds to KL because they are the second sides in the similarity statement. The scale factor from the large border to the smaller border is $\frac{12}{18} = \frac{2}{3}$, so $KL = 27 \times \frac{2}{3} = 18$ cm.

CHALLENGE

AB ↔ RS, BC ↔ QR, CD ↔ PQ, and DA ↔ SP. The scale factor from ABCD to PQRS is $\frac{3}{2}$ because $12 \times \frac{3}{2} = 18$, $16 \times \frac{3}{2} = 24$, $20 \times \frac{3}{2} = 30$, and $24 \times \frac{3}{2} = 36$.

Accept side names written in either direction, such as ST or TS. Accept equivalent scale factors, such as 1.5 for $\frac{3}{2}$, when they are correct.