LESSON MAKER PRO

Scale Side Match

Match corresponding sides with ratios.

GRADE 7 · 7.MG.2.d

7.MG.2.d "Write proportions to express the relationships between the lengths of corresponding sides of similar quadrilaterals and triangles."

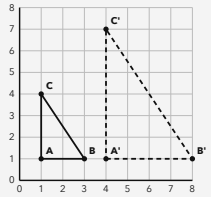
NAME _____ DATE _____

MATCH BEFORE YOU RATIO

First match the vertices and sides that go together. Put matching sides in ratios in the same order, then set the ratios equal.

WORKED EXAMPLE

Use the similar triangles on the grid. Write a proportion using AB and AC.



1. Match AB with A'B' and AC with A'C'.
2. Count AB = 2 and A'B' = 4.
3. Count AC = 3 and A'C' = 6.

Answer: 2/4 = 3/6

PRACTICE 4 problems

1 Triangle ABC is similar to triangle DEF. A matches D, B matches E, and C matches F. AB = 5, BC = 7, CA = 9, DE = 15, EF = 21, and FD = 27. Write a chain proportion.

ANSWER _____

2 Quadrilateral WXYZ is similar to JKLM. W matches J, X matches K, Y matches L, and Z matches M. WX = 11, XY = 13, YZ = 17, ZW = 19. JK = 22, KL = 26, LM = 34, MJ = 38. Write a chain proportion.

ANSWER _____

3 Triangle PQR is similar to triangle STU. P matches S, Q matches T, and R matches U. PQ = 12, QR = 15, PR = 18, ST = 20, TU = 25, and SU = 30. Write a proportion with triangle PQR first.

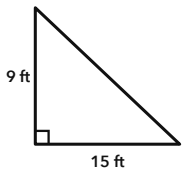
ANSWER _____

4 Triangle GHI is similar to triangle JKL. G matches J, H matches K, and I matches L. GH = 14, HI = 21, GI = 28, JK = 18, KL = 27, and JL = 36. Write a chain proportion with triangle JKL first.

ANSWER _____

APPLY IT Show your work

1 The small ramp is shown. A larger similar ramp has a base of 25 ft and height x. Write a height-to-base proportion, then find x.



ANSWER _____

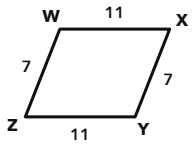
2 A student designs similar rectangular concert posters. The small poster is 7 cm wide and 11 cm tall. The large poster is x cm wide and 33 cm tall. Write a width-to-height proportion, then find x.

WORK SPACE

ANSWER _____

CHALLENGE One step up

In the figure, quadrilateral ABCD is similar to WXYZ. A matches Y, B matches Z, C matches W, and D matches X. AB = 22, BC = 14, CD = x, and DA = 14. Write a chain proportion with ABCD first, then find x.



WORK SPACE AND ANSWER

ANSWER KEY

Scale Side Match

GRADE 7 · 7.MG.2.d

PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	Triangle ABC is similar to triangle DEF. A matches D, B matches E, and C matches F. AB = 5, BC = 7, CA = 9, DE = 15, EF = 21, and FD = 27. Write a chain proportion.	**5/15 = 7/21 = 9/27**
2	Quadrilateral WXYZ is similar to JKLM. W matches J, X matches K, Y matches L, and Z matches M. WX = 11, XY = 13, YZ = 17, ZW = 19. JK = 22, KL = 26, LM = 34, MJ = 38. Write a chain proportion.	**11/22 = 13/26 = 17/34 = 19/38**
3	Triangle PQR is similar to triangle STU. P matches S, Q matches T, and R matches U. PQ = 12, QR = 15, PR = 18, ST = 20, TU = 25, and SU = 30. Write a proportion with triangle PQR first.	**12/20 = 15/25 = 18/30**
4	Triangle GHI is similar to triangle JKL. G matches J, H matches K, and I matches L. GH = 14, HI = 21, GI = 28, JK = 18, KL = 27, and JL = 36. Write a chain proportion with triangle JKL first.	**18/14 = 27/21 = 36/28**

PART 2 · APPLY IT

1. **9/15 = x/25; x = 15 ft** Use height/base for both similar ramps: 9/15 = x/25. Cross multiply to get 15x = 225, so x = 15 ft.
2. **7/11 = x/33; x = 21 cm** Compare width/height in the same order: 7/11 = x/33. Since 33 is 3 times 11, x is 3 times 7, or 21 cm.

CHALLENGE

22/11 = 14/7 = x/11 = 14/7; x = 22

Accept equivalent proportions if corresponding sides stay in the same order. For the challenge, AB matches YZ, BC matches ZW, CD matches WX, and DA matches XY.