



Similarity and dilations

GRADE 8 MATH

Name _____

Date _____

Order both sets of sides before pairing. Show every ratio.

WORKED EXAMPLE

Similar = rigid motions and dilations; congruent is the scale factor 1 case. Test with equal ratios of corresponding sides, never with differences. Area scales by k^2 .

1. Are 5, 12, 13 and 10, 24, 26 similar? Show the ratios.

APPLICATION

Show your thinking

Answer

2. Are 4, 6, 8 and 6, 8, 10 similar? Show the ratios and the differences.

APPLICATION

Show your thinking

Answer

3. A triangle has sides 4, 6 and 8. It is enlarged by scale factor 2.5. Give the new sides.

APPLICATION

Show your thinking

Answer

4. Two similar figures have sides in the ratio 5. The smaller has area 3. What is the larger's area?

APPLICATION

Show your thinking

Answer

5. Explain why comparing differences can never test similarity, whatever the numbers.

REASONING

Show your thinking

Answer

6. A photograph 4 cm by 6 cm is enlarged to 10 cm by 15 cm. Is the enlargement similar to the original?

Show your thinking

Answer

7. Are all circles similar? Explain.

Show your thinking

Answer

8. Describe a sequence of transformations that would carry a 3-4-5 triangle onto a 9-12-15 triangle placed upside down.

Show your thinking

Answer