



Similarity and dilations

GRADE 8 MATH

Name _____

Date _____

Show your ratios as fractions or decimals. One skill: **similarity and dilations**.

WORKED EXAMPLE

Two figures are **similar** when a sequence of translations, reflections, rotations **and dilations** carries one onto the other. That is the congruence definition with one extra move, so congruent figures are similar with scale factor 1. The test is **ratios**: pair up corresponding sides — order both sets first — and divide. If every ratio is the same number, the figures are similar. **Differences do not test similarity**. Enlarging multiplies, so a long side gains more than a short one.

1. Triangle A has sides 3, 4 and 5. Triangle B has sides 6, 8 and 10. Are they similar? Show the ratios.

APPLICATION

Show your thinking

Answer

2. Triangle C has sides 6, 7 and 8. Work out its differences from triangle A, and then its ratios with triangle A.

APPLICATION

Show your thinking

Answer

3. Ben says triangle C is similar to A because you add 3 to every side. Use your answer to item 2 to explain why he is wrong.

REASONING

Show your thinking

Answer

4. Triangle A has area 6. Triangle B has sides twice as long. What is B's area?

APPLICATION

Show your thinking

Answer