

Push Tasks



1. Triangle A has sides 4, 6, 10. Triangle B has sides 6, 9, 15. Prove they are similar using a ratio check.

2. Triangle A has sides 5, 7, 9. Triangle B has sides 10, 14, 19. Are they similar? Justify.

3. A triangle with sides 3, 4, 5 is enlarged so the longest side becomes 17.5 cm. Find the other two sides.

4. A rectangle is 8 cm by 14 cm. A similar rectangle has longer side 35 cm. Find the shorter side.

5. A similar triangle has scale factor $\frac{5}{4}$. One original side is 16 cm. Find the new matching side.

6. A similar triangle has scale factor $\frac{3}{4}$. One new side is 18 cm. Find the original matching side.

7. Two similar polygons have perimeters 27 cm and 45 cm. Find the scale factor from small to large.

8. A shape has area 12 cm^2 . It is enlarged by scale factor 3. What happens to each side length?

9. A small triangle has perimeter 18 cm. A similar larger triangle has factor 2.5. Find the new perimeter.

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10. A map is drawn at scale $\frac{1}{25000}$. A river is 7.2 cm on the map. Find the real length in cm.

11. A model car is built at scale $\frac{1}{18}$. The real car length is 4.5 m. Find the model length in m.

12. A photocopy is reduced to 80% size. What scale factor is this? If the width was 25 cm, find the new width.

13. Shapes P and Q are similar. A side goes from 9 cm on P to 15 cm on Q. Another side on P is 12 cm. Find its matching side on Q.

14. Shapes R and S are similar. A side on R is 18 cm and the matching side on S is 12 cm. Another side on R is 27 cm. Find the matching

15. A triangle has sides $x, x + 2, x + 4$. A similar triangle has matching sides $2x, 2x + 4, 2x + 8$. What is the scale factor?

16. Two triangles have side sets 6, 9, 12 and 10, 15, 20. Explain why one scale factor works for all three sides

17. Two shapes have equal angles but side ratios $2 : 3, 4 : 6$, and $5 : 8$. Are they similar? Why or why not?

18. A square is enlarged from side a to side $3a$. What is the scale factor? What happens to the perimeter?

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19. A triangle with perimeter 24 cm is reduced by factor $\frac{2}{3}$. Find the new perimeter.

20. A similar rectangle has dimensions $3x$ by $5x$. A larger one has dimensions $12x$ by $20x$. Find the scale factor.

21. A shape is enlarged by factor k . One side changes from 7 cm to 28 cm. Find k .

22. A shape is reduced by factor k . One side changes from 30 cm to 18 cm. Find k .

23. Two similar triangles have matching sides a and $1.5a$. Another side on the smaller triangle is 14 cm. Find the larger matching side

24. A polygon side is 11 cm after enlargement by factor 2.2. Find the original matching side.

25. State one similarity test using side lengths only.

26. Why can two shapes with one matching side ratio still fail to be similar?

27. A large triangle is similar to a small one with factor 4. If the small sides are 2, 3, 4, write the large side lengths