Ratio of areas of similar triangles worksheet – Grade 8

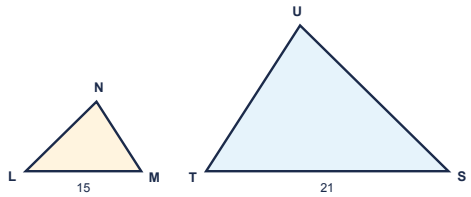
Grade 8 · Mixed level · 20 questions · **Version X9969**

Name: _____ Date: _____ Score: ___ / 20

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1. Work out the ratio of the areas of these similar triangles.



A. 7 : 5 **B.** 25 : 49 **C.** 125 : 343 **D.** 5 : 7

2. Two similar triangles have sides in the ratio 1 : 9. The smaller has an area of 2 cm². What is the area of the larger, in cm²?

   Answer: _____ cm²

3. △PQR ~ △XYZ with scale factor 9. △PQR has an area of 4 cm². What is the area of △XYZ, in cm²?

   Answer: _____ cm²

4. △LMN ~ △STU with scale factor 8. △LMN has an area of 4 cm². What is the area of △STU, in cm²?

   Answer: _____ cm²

5. △GHI ~ △JKL with scale factor 5. △GHI has an area of 4 cm². What is the area of △JKL, in cm²?

   Answer: _____ cm²

6. △ABC ~ △DEF with scale factor 9. △ABC has an area of 3 cm². What is the area of △DEF, in cm²?

   Answer: _____ cm²

7. A triangle's sides are all multiplied by 9. By what number is its area multiplied?

   Answer: _____

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8. Two similar triangles have perimeters 12 cm and 28 cm. The larger has an area of 245 cm². What is the area of the smaller, in cm²?

   Answer: _____ cm

9. Two similar triangles have areas 12 cm² and 147 cm². A side of the smaller is 4 cm. How long is the matching side of the larger, in cm?

   Answer: _____ cm

10. The sides of a triangle are all doubled. The new area is 100 cm². What was the original area, in cm²?

    Answer: _____ cm²

11. Two similar triangles have areas in the ratio 1 : 81. What is the ratio of their sides?

    A. 1 : 729 **B.** 1 : 9 **C.** 9 : 1 **D.** 1 : 81

12. The sides of a triangle are all doubled. The new area is 600 cm². What was the original area, in cm²?

    Answer: _____ cm²

13. Two similar triangles have areas 28 cm² and 567 cm². A side of the smaller is 6 cm. How long is the matching side of the larger, in cm?

    Answer: _____ cm

14. Two similar triangles have perimeters 18 cm and 48 cm. The larger has an area of 512 cm². What is the area of the smaller, in cm²?

    Answer: _____ cm

15. A scale model triangle has sides 1/6 of the real ones. What fraction of the real area is the model's area?

    A. 1/216 **B.** 1/6 **C.** 1/12 **D.** 1/36

16. Two similar triangles have heights 3 cm and 27 cm. The smaller area is 5 cm². What is the larger area, in cm²?

    Answer: _____ cm²

17. A triangular sail is enlarged so each side is 7 times as long. It used 1 m² of cloth. How many m² does the larger sail use?

    Answer: _____

18. Two similar triangles have sides in the ratio 2 : 7, and their areas add to 159 cm². What is the larger area, in cm²?

    Answer: _____ cm²

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19. A triangular sail is enlarged so each side is 9 times as long. It used 3 m² of cloth. How many m² does the larger sail use?

    Answer: _____

20. Two similar triangles have heights 35 cm and 45 cm. The smaller area is 196 cm². What is the larger area, in cm²?

    Answer: _____ cm²

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Answer key · Version X9969

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1. **B (25 : 49)**
2. **162**
3. **324**
4. **256**
5. **100**
6. **243**
7. **81**
8. **45**
9. **14**
10. **25**
11. **B (1 : 9)**
12. **150**
13. **27**
14. **72**
15. **D (1/36)**
16. **405**
17. **49**
18. **147**
19. **243**
20. **324**

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