Congruent triangles: RHS (hypotenuse-leg) worksheet – Grade 8

Grade 8 · Mixed level · 20 questions · **Version X3594**

Name: _____ Date: _____ Score: ___ / 20

Scan to check answers + earn stars

Done the worksheet? Scan the code (or enter version X3594 on this skill's page at themathmeridian.com) to check your answers online and earn stars.

1. Two right triangles have hypotenuse 58 cm. One has a side of 40 cm and the other a side of 40 cm. Are they congruent?

   A. Yes, by RHS **B.** No **C.** Only by SSS **D.** Only by ASA

2. What does each letter in RHS stand for?

   A. Right angle, Hypotenuse, Side **B.** Ratio, Height, Side **C.** Right angle, Height, Slope **D.** Rotate, Hold, Shift

3. In a right triangle, which side is the hypotenuse?

   A. The side opposite the right angle **B.** The shortest side **C.** Either side next to the right angle **D.** The base

4. Two triangles each have a hypotenuse of 10 cm and a side of 6 cm, but only one has a right angle. Can you use RHS?

   A. No, both need a right angle **B.** Yes **C.** Only if they are the same colour **D.** Yes, by AAS

5. Which rule shows these right triangles are congruent?



A. SSS **B.** ASA **C.** RHS **D.** AAS

The Math Meridian

6. Which rule shows these right triangles are congruent?



A. RHS **B.** ASA **C.** AAS **D.** SSS

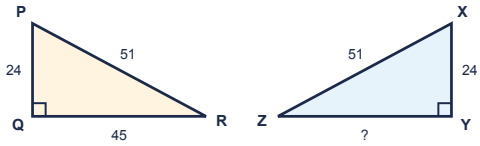
7. Two right triangles have hypotenuse 51 cm. One has a side of 24 cm and the other a side of 24 cm. Are they congruent?

   A. Yes, by RHS **B.** No **C.** Only by SSS **D.** Only by ASA

8. △PQR ≅ △XYZ, both right-angled at Q and Y. ∠P = 70°. What is ∠Z, in degrees?

   Answer: _____ °

9. These right triangles are congruent. What is the missing side, in cm?



   Answer: _____

10. △GHI ≅ △JKL, both right-angled at H and K. ∠G = 27°. What is ∠L, in degrees?

    Answer: _____ °

11. Two right triangles are congruent by RHS, with hypotenuse 13 cm and one side 5 cm. How long is the third side, in cm?

    Answer: _____ cm

12. Two right triangles each have a hypotenuse of 75. Is that enough to prove them congruent?

    A. No, one more side is needed **B.** Yes **C.** Yes, by SSS **D.** Yes, by AAS

13. △LMN ≅ △STU, both right-angled at M and T. ∠L = 47°. What is ∠U, in degrees?

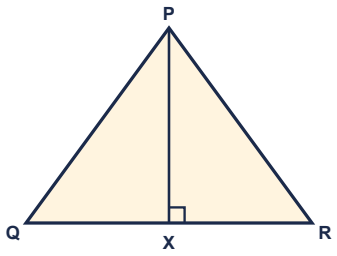
    Answer: _____ °

14. Two right triangles are congruent, with hypotenuse 39 cm and one side 15 cm. What is the area of each, in cm²?

    Answer: _____ cm²

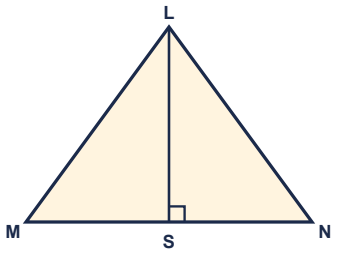
The Math Meridian

15. In isosceles △PQR, PQ = PR = 50 cm, and height PX = 14 cm. How long is the base QR, in cm?



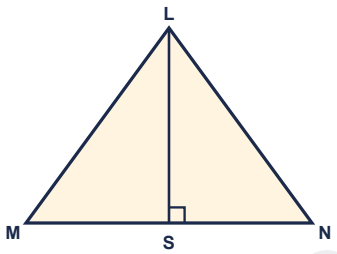
Answer: _____ cm

16. In isosceles △LMN, LM = LN = 29 cm, and height LS = 20 cm. What is the area, in cm²?



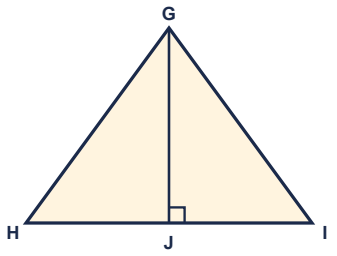
Answer: _____ cm²

17. In isosceles △LMN, LM = LN, and LS is perpendicular to MN. If ∠MLN = 56°, what is ∠MLS, in degrees?



Answer: _____ °

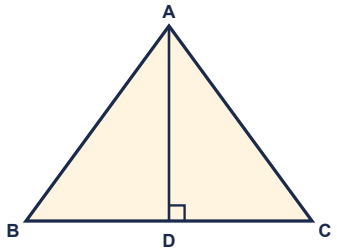
18. In isosceles △GHI, GH = GI, and GJ is perpendicular to HI. If ∠HGI = 58°, what is ∠HGJ, in degrees?



Answer: _____ °

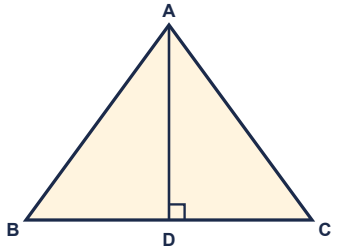
The Math Meridian

19. In isosceles △ABC, AB = AC, and AD is perpendicular to BC. Why is △ABD ≅ △ACD?



A. RHS, using the shared side AD **B.** SSS only **C.** AAA **D.** They are not congruent

20. In isosceles △ABC, AB = AC = 13 cm, and height AD = 5 cm. How long is the base BC, in cm?



Answer: _____ cm

The Math Meridian

Answer key · Version X3594

Congruent triangles: RHS (hypotenuse-leg) worksheet – Grade 8 · Grade 8 · to reprint this sheet or check the answers, enter X3594 on the skill page.

1. **A (Yes, by RHS)**
2. **A (Right angle, Hypotenuse, Side)**
3. **A (The side opposite the right angle)**
4. **A (No, both need a right angle)**
5. **C (RHS)**
6. **A (RHS)**
7. **A (Yes, by RHS)**
8. **20**
9. **45**
10. **63**
11. **12**
12. **A (No, one more side is needed)**
13. **43**
14. **270**
15. **96**
16. **420**
17. **28**
18. **29**
19. **A (RHS, using the shared side AD)**
20. **24**

The Math Meridian