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Special Right Triangles - Practice Worksheet

Name: _____ Date: _____

Instructions: Find the missing side(s) in each special right triangle. Leave answers in simplest radical form where needed. Show your work.

1. 45-45-90 triangle. One leg = 5. Find the hypotenuse.

2. 45-45-90 triangle. Hypotenuse = 10. Find each leg.

3. 45-45-90 triangle. One leg = 7*sqrt(2). Find the hypotenuse.

4. 30-60-90 triangle. Short leg = 4. Find the long leg and hypotenuse.

5. 30-60-90 triangle. Hypotenuse = 14. Find both legs.

6. 30-60-90 triangle. Long leg = 9*sqrt(3). Find the short leg and hypotenuse.

7. 45-45-90 triangle. One leg = 3*sqrt(2). Find the hypotenuse and the other leg.

8. 30-60-90 triangle. Short leg = 5. Find the area of the triangle.

9. A square has diagonal = 12. Using 45-45-90 rules, find the side length of the square.

10. An equilateral triangle has side = 10. Using 30-60-90 rules, find its height.

11. 30-60-90 triangle. Long leg = 6. Find the short leg, hypotenuse, and area.

12. 45-45-90 triangle. Hypotenuse = 9*sqrt(2). Find each leg and the perimeter.

Answer Key

1. 5*sqrt(2)
2. 5*sqrt(2)
3. 14
4. Long leg = 4*sqrt(3), Hypotenuse = 8
5. Short leg = 7, Long leg = 7*sqrt(3)
6. Short leg = 9, Hypotenuse = 18
7. Other leg = 3*sqrt(2), Hypotenuse = 6
8. Area = (1/2)*5*5*sqrt(3) = 25*sqrt(3)/2
9. 6*sqrt(2)
10. 5*sqrt(3)

11. Short leg = 2*sqrt(3), Hypotenuse = 4*sqrt(3), Area = 6*sqrt(3)
12. Each leg = 9, Perimeter = 18 + 9*sqrt(2)