# Algebra 2 Special Triangles Name:

**Special Triangles (Right Triangles)**

Triangle

The hypotenuse is twice as long as the shorter leg

The longer leg is times as long as the shorter leg

(The longer leg is the side opposite the angle)

Examples:

Triangle

The hypotenuse is as long as a leg.

The two legs are the same size.

Examples:

**In a 30o – 60o – 90o triangle:**







**1) the hypotenuse is twice as long as the short leg.**

**2) the long leg is  times the short leg.**

***Fill in the missing sides of the triangle.***

30°

****

b

a

**6**

60°

b

a

1) 2) 3)

30°

**8**

b

a

a = \_\_\_\_\_\_\_\_

b = \_\_\_\_\_\_\_\_

a = \_\_\_\_\_\_\_\_

b = \_\_\_\_\_\_\_\_

a = \_\_\_\_\_\_\_\_

b = \_\_\_\_\_\_\_\_

30°

****

b

a

****

60°

b

a

**4) 5) 6)**

60°

**8**

b

a

a = \_\_\_\_\_\_\_\_

b = \_\_\_\_\_\_\_\_

a = \_\_\_\_\_\_\_\_

b = \_\_\_\_\_\_\_\_

a = \_\_\_\_\_\_\_\_

b = \_\_\_\_\_\_\_\_

7) 8) 9)

30°



b

a

30°

**24**

b

a

60°

**15**

b

a

a = \_\_\_\_\_\_\_\_

b = \_\_\_\_\_\_\_\_

a = \_\_\_\_\_\_\_\_

b = \_\_\_\_\_\_\_\_

a = \_\_\_\_\_\_\_\_

b = \_\_\_\_\_\_\_\_

**In any 45°– 45° – 90° triangle:**

x

x

x****

**The hypotenuse is  times as long as a leg.**

**Fill in the missing sides of the triangle.**

a

1) 2) 3)

6

b

a

a



11

45°

y

b

b

45°

a = \_\_\_\_\_\_\_\_

b = \_\_\_\_\_\_\_\_

a = \_\_\_\_\_\_\_\_

b = \_\_\_\_\_\_\_\_

a = \_\_\_\_\_\_\_\_

b = \_\_\_\_\_\_\_\_

4) 5) 6)

a



b

a

a

b



45°

45°



b

a = \_\_\_\_\_\_\_\_

b = \_\_\_\_\_\_\_\_

a = \_\_\_\_\_\_\_\_

b = \_\_\_\_\_\_\_\_

a = \_\_\_\_\_\_\_\_

b = \_\_\_\_\_\_\_\_

a

7) 8) 9)

a



12

a

b

45°

45°



b

b

a = \_\_\_\_\_\_\_\_

b = \_\_\_\_\_\_\_\_

a = \_\_\_\_\_\_\_\_

b = \_\_\_\_\_\_\_\_

a = \_\_\_\_\_\_\_\_

b = \_\_\_\_\_\_\_\_

**Multi-Step Special Right Triangles**

Find the missing side lengths. Leave your answers as radicals in simplest form.

**Multi-Step Special Right Triangles Problems**

Find the missing side lengths. Leave your answers as radicals in simplest form.

1. 2.

3. 4.

5.