

9.3 Special Right Triangles

Investigation 1, 45 – 45 – 90

- Complete the table below. (Hint: Draw the right triangle, label what you know, use $a^2+b^2=c^2$). Make sure you simplify your radicals.

Length of each leg	1	2	3	4	5	6	7	10	L
Length of the hypotenuse (as a simplified radical)									

- Complete the conjecture below.

Isosceles Right Triangle Conjecture – In an isosceles right triangle, if the legs have length x , then the hypotenuse has length _____.

Investigation 2, 30 – 60 – 90 Triangles

- Draw an equilateral triangle ABC below. On the triangle provided, draw a perpendicular bisector through line segment AC and point B.

- Label the intersection between the line you just drew and AC as point D. What type of triangle

(based on the angles) is triangle BDC? _____. Now, complete the statement below.

In a 30-60-90 right triangle, the shortest leg is _____ the hypotenuse.

- Complete the table below.

Length of shorter Leg	1	2	3	4	5	6	7	10	a
Length of hypotenuse									
Length of longer leg (simplified radical)									

- Complete the conjecture below.

30 – 60 – 90 Triangle Conjecture - In a 30 – 60 – 90 triangle, if the shorter leg has length a , then the longer leg has length _____ and the hypotenuse has length _____ ?