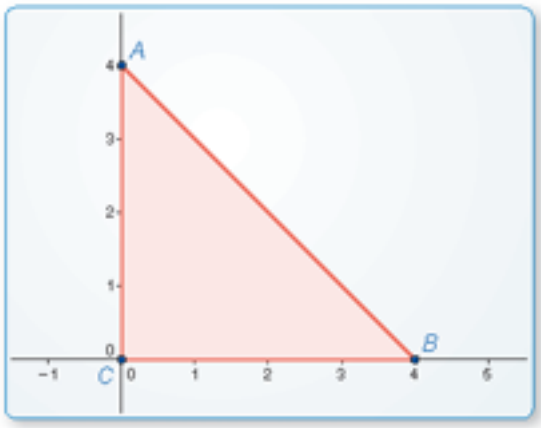
Name:_____ Date:_____ Band:_____
Geometry

7.2 Special Right Triangles Activities

Exploration 1: Side Ratios of an Isosceles Right Triangle

Below is an isosceles right triangle with a leg length of 4 units.



Step 1: Verify the acute angle measures using a protractor. Explain why this triangle is called a 45-45-90 triangle.

Step 2: Find the exact ratios of the side lengths (using square roots).

$\frac{AB}{AC} =$ ____

$\frac{AB}{BC} =$ ____

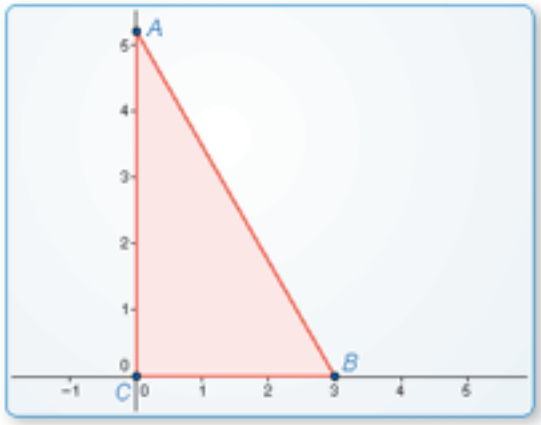
$\frac{AC}{BC} =$ ____

Step 3: Use your results to write a conjecture about the ratios of the side lengths of an isosceles right triangle. What is the relationship among the side lengths of 45-45-90 triangle?

Hypotenuse = _____

Exploration 2: Side Ratios of a 30-60-90 Triangle

Below is a right triangle with acute angle measures of 30° and 60° (a 30-60-90 triangle), where the shorter leg length is 3 units.



Sample

Points

$A(0, 5.20)$

$B(3, 0)$

$C(0, 0)$

Segments

$AB = 6$

$BC = 3$

$AC = 5.20$

Angles

$m\angle A = 30°$

$m\angle B = 60°$

Step 1: Find the exact ratios of the side lengths (using square roots).

$\frac{AB}{AC} =$ ____

$\frac{AB}{BC} =$ ____

$\frac{AC}{BC} =$ ____

Step 2: Use your results to write a conjecture about the ratios of the side lengths of a 30-60-90 triangle. What is the relationship among the side lengths of 30-60-90 triangles?

Hypotenuse = _____

Longer Leg = _____