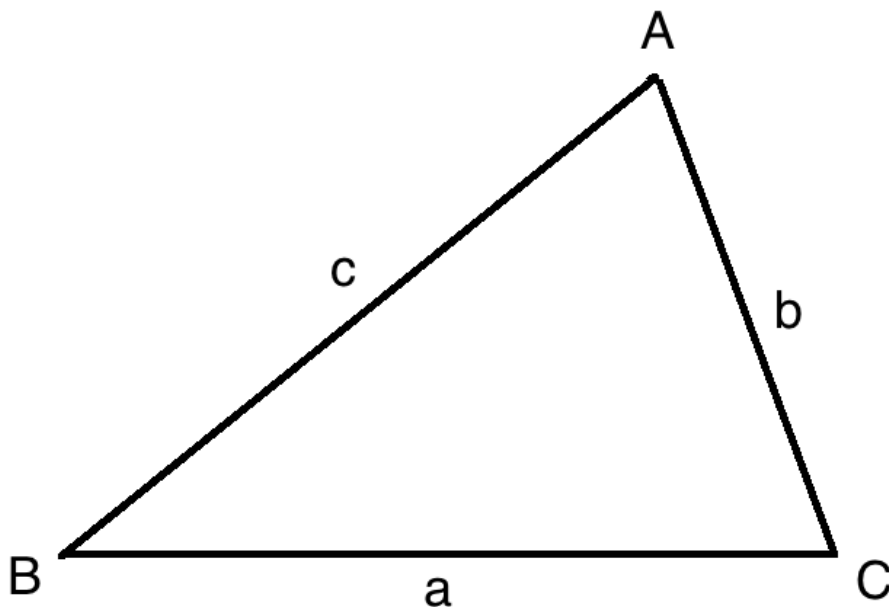


## Background

Up to this point, trigonometry has exclusively involved RIGHT triangles. But, what if we wanted to look at a non-right triangle:



In class today, we derived the Law of Sines, which is a way to relate the sides and angles of a non-right triangle. The Law of Sines is as follows (for a triangle set up like the above):

$$\frac{\sin(A)}{a} = \frac{\sin(B)}{b} = \frac{\sin(C)}{c}$$

## Your Task

Use the Law of Sines, plus your existing trig knowledge, to answer the following questions (the values of  $A, B, C, a, b$ , and  $c$  may change from question to question):

1. If angle  $A = \frac{\pi}{4}$ , side  $a = 2$ , and angle  $B = \frac{\pi}{6}$ , how long is side  $b$ ?
2. If  $\sin(C) = \frac{3}{5}$ ,  $a = 5$ , and  $A = \frac{\pi}{6}$ , how long is side  $c$ ?
3. If  $b = 3$ ,  $c = 4$ , and  $\sin(B) = \frac{5}{12}$ , compute  $\sin(C)$ .
4. If  $a = 1$ ,  $b = 2$ , and  $\sin(B) = \frac{14}{25}$ , compute  $\cos(A)$ .