Index Card #19 (Back & Front)

Law of Sines and Cosines

**Law of Sines: Used: *You have* 2 Angles & a Side *Looking for* a Side**

**OR *You have* 2 Sides & an Angle *Looking for* an Angle**

**You have PAIRS**

**Law of Cosines: Used: *You have* 3 Sides *Looking for* an Angle**

***OR You have* 2 Sides & an Angle *Looking for* a Side**

**You will know All 3 Sides at the END**

**Area of a Triangle:** k =

**Ambiguous Case - How many triangles are possible ?**

**Steps:**

**FIRST:** **Draw a Picture**

b a

A B

**SECOND:**  **Find your missing angle using Law of Sines**

**THIRD:**

Is Sin **** If yes: If NO: Step 4

**0 Triangles**

**FOURTH:**

**Remember: is Positive in Quadrants I and II**

**To find the 2nd possible angle….180-Angle gives you the 2nd Angle**

**The angles of a Triangle sum to**

so does the 2nd angle that you found go over when you add it with the angle given???

If yes: If NO: Step 5

**1 Triangle**

(If angle given is acute – Acute Triangle) (If angle given – Obtuse Triangle**)**

**FIFTH:**

The 2nd angle that you found does not go over when you add it with the angle given

If yes:

**2 Triangles**

b a a (1 Acute 1 Obtuse Triangle)

Now you have two triangles:

A B’ B One with the first value of B found The second with 180 – B for the value of B