Name_____ Date_____ Period_____

PreAP Precalculus: TAKE-HOME QUIZ 6.5-6.6 C— Law of Sines & Cosines & Area

Calculator permitted. Report 3 decimals in all your final answers with NO INTERMEDIATE ROUNDING ERROR.

I. (Solving & Area) Given the information for each triangle below, find the missing information, including the area. Draw your triangles. If there is more than one possible solution, give the full solution to **both** triangles (2 pictures). If there is no triangle or unique triangle, say so and justify. SHOW YOUR UNITS IN CHART. SHOW ALL WORK, DRAW ALL TRIANGLES!! STORE ALL INTERMEDIATE VALUES!!!!!!

1. $\triangle ABC$, $c = 111$ inches, $B = 97^\circ$ $C = 43^\circ$, Area = ?

2. $\triangle ABC$, $a = 33$ feet, $c = 28$ feet, $C = 47.3^\circ$, Area = ?

3. $b = 3.9$ miles, $c = 10.8$ miles, $A = 77°$, Area = ?

4. $b = 38$ cm, $c = 36$ cm, $B = 102°$, Area = ?

5. $a = 3.141$ meters, $b = 2.71$ meters, $c = 1.618$ meters, Area = ?

II. SHORT ANSWER

6. An oil tanker and a cruise ship leave port at the same time and travel straight-line courses at 32 mph and 46 mph, respectively. Two hours later, they are 63 miles apart. What is the angle between their courses?

7. Using polygon triangulation, find the area of the irregular polygon. Show all work and store/label all intermediate values. Include units on your final answer.