AC Geometry **Name**_____

Extension: Law of Sines & Cosines **Date**_____ **Period**____

Each problem utilizes ΔABC with sides a, b & c opposite the angles A, B & C respectively. 'Solve' each triangle described below. Draw a picture for each. Round answers to the nearest 10^{th}.

1. a = 42, c = 60 & $m\angle B = 58°$

2. a = 12, $m\angle B = 70°$ & $m\angle A = 15°$

3. a = 16, b = 20 & $m\angle B = 40°$

4. a = 7, b = 12 & c = 15

6. A ship is sighted from two radar stations 43km apart. The angle between the line segment joining the two stations and the radar beam of the first station is 37°. The angle between the line segment joining the two stations and the radar beam of the second station is 113°. How far is the ship from the second station?

7. Raya is hiking in the Outback. On her walk about she walks for 6 miles on a course of 350°. She then walks for 8 miles on a course of 250°. Raya then returns to camp. What was the total distance of her walk about?

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8. Hanna has taken up hang gliding. She sets a course of 60° and glides for 15 miles. Then she sets a new course of 220° and glides for 8 miles. How far is she from her starting point?

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9. Two planes leave New York at Noon. One flies due west at 270 mph. The other plane flies at 325 mph on a bearing of N 40° W. How far apart the two planes are at 2 pm.

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