


PreAP Precalculus: Practice Test Law of Sines & Cosines

Calculator permitted. Round all answers to 3 decimals with NO INTERMEDIATE ROUNDING ERROR.

Given the information for each triangle below, complete the chart. If there are more than one possible solutions, give the full solution to both triangles. If there is no triangle or unique triangle, say so and justify. Assume all angles in degrees. SHOW ALL WORK, DRAW ALL TRIANGLES!!

	a	b	c	A	B	C	AREA
1.	15.4962	36.8701	50	11	27	142°	175.8788
2.	10	6	11.6495 5.4937	59.1370° 120.8629°	31	89.8629° 28.1370°	29.9999 14.1474
3.	9	18	8	No such Triangle since (Triangle Inequality 9 + 8 = 17 < 18 (does not hold))			
4.	10	5.1496	5	160.2935°	10	9.7064°	4.3412
5.	No unique triangle. Infinitely many similar triangles			58	72	50	
6.	20	20√3 or 34.6410	40	30	60	90°	200√3 or 346.4101
7.	3	7	8	21.7867°	60°	98.2132°	6√3 or 10.3923
8.	4	1	No solution 1 < h = 2.2367		34		

9. Determine the area of a regular pentagon which is inscribed in a circle of radius 8.76 ft. 182.4544 ft<sup>2</sup>

10. A builder must know the distance across a small lake between two points A and B. A surveyor is hired to measure the distances from C to A and from C to B and finds them to be 700 and 612 yd, respectively. The measure of ∠ACB is 79°. Determine the distance from A to B. 837.2925 yd

11. From the top of a 100-foot lighthouse on top of a hill, a ship is observed at an angle of depression measuring 17.6°. If the angle of depression to the ship from the base of the lighthouse measures 15.4°, how many feet is it from the ship to the base of the lighthouse? 2483.0556 ft