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## Law of Sines and Cosines Word Problems

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4. Three boats are at sea: Jenny one (J1), Jenny two (J2), and Jenny three (J3). The crew of J1 can see both J2 and J3. The angle between the line of sight to J2 and the line of sight to J3 is 45 degrees. If the distance between J1 and J2 is 2 miles and the distance between J1 and J3 is 4 miles, what is the distance between J2 and J3?
5. Airplane A is flying directly toward the airport which is 20 miles away. The pilot notices airplane B 45 degrees to her right. Airplane B is also flying directly toward the airport. The pilot of airplane B calculates that airplane A is 50 degrees to his left. Based on that information, how far is airplane B from the airport?
6. A plane leaves JFK International Airport and travels due west at 570 mi/hr. Another plane leaves 20 minutes later and travels  $22^\circ$  west of north at the rate of 585 mi/h. To the nearest ten miles, how far apart are they 40 minutes after the second plane leaves.