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1. The diagonals of a parallelogram are 56 inches and 34 inches and intersect at an angle of  $0^\circ$ . Find the length of the shorter side.
  2. Two planes take off at the same time from an airport. The first plane is flying at 246 miles per hour on a course of  $135^\circ$ . The second plane is flying in the direction  $175^\circ$  at 357 miles per hour. Assuming that there are no wind currents blowing, how far apart are they after 2 hours?
  3. Two guy wires from the top of a tent pole are anchored to the ground on each side of the pole by two stakes so that the two stakes and the tent pole lie along the same line. One of the wires is 56 feet long and makes an angle of  $47^\circ$  with the ground. The other wire is 65 feet long and makes an angle of  $37^\circ$  with the ground. How far apart are the stakes that hold the wires to the ground?