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1. A person standing on the street looks up to the top of a building and finds that the angle of elevation is  $38^\circ$ . She then walks one block further away (9440 feet) and finds that the angle of elevation to the top of the building is now  $28^\circ$ . How far away from the building is she when she makes her second observation?
  2. A woman entering an outside glass elevator on the ground floor of a hotel glances up to the top of the building across the street and notices that the angle of elevation is  $48^\circ$ . She rides the elevator up three floors (60 feet) and finds that the angle of elevation is  $32^\circ$ . How tall is the building across the street?
  3. A ship is anchored off a long straight shoreline that runs north and south. From two observation points 18 miles apart on shore, the bearings of the ship are  $N 31^\circ E$  and  $S 53^\circ E$ . What is the distance from the ship to each of the observation points?
  4. A 50 foot wire running from the top of a tent pole to the ground makes an angle of  $58^\circ$  with the ground. If the length of the tent pole is 44 feet, how far is it from the bottom of the tent pole to the point where the wire is fastened to the ground? Notice that the tent pole is not necessarily perpendicular to the ground.
  5. A plane is headed due east with an airspeed of 340 miles per hour. Its true course, however, is at  $98^\circ$  from due north. If the wind currents are constant 55 miles per hour, what are the possibilities for the ground speed of the plane?