

Lesson 3.10 - Supplement

1. A footbridge is to be built across a small lake from a gazebo to a dock. From a tree 100 yards from the gazebo the bearing is $E 24^\circ S$. From the tree to the dock the bearing is $S 15^\circ E$. The bearing from the gazebo to the dock is $S 33^\circ W$. What is the length of the bridge?

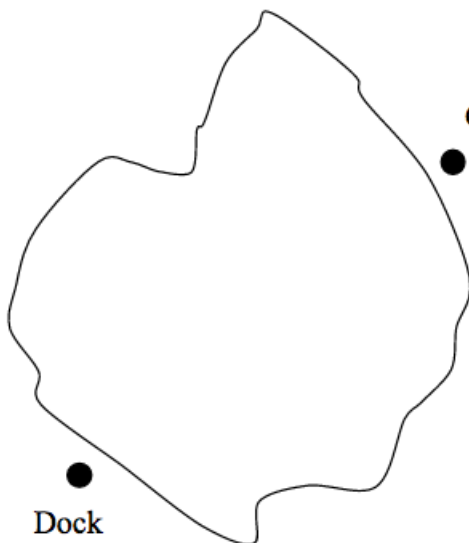
Tree



Gazebo



Dock



2. A boat is sailing due east parallel to the shoreline at a speed of 20 miles per hour. At a given time the, the bearing to a lighthouse is $S 68^\circ E$, and 30 minutes later the bearing is $S 52^\circ E$. Find the distance from the boat to the lighthouse at Boat Position 2.

Boat Position 1



Boat Position 2



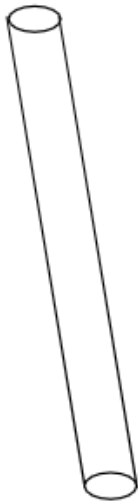
Lighthouse



Lesson 3.10 - Supplement

3. Two planes leave an airport at the same time. One plane is flying 650 m.p.h at a bearing $N 37^\circ E$, and the other plane is flying at 825 m.p.h at a bearing of $N 53^\circ W$. How far apart are the planes after flying for 2 hours?

4. A poll tilts towards the sun at an 8° angle from the vertical at it casts a 22-ft shadow. The angle of elevation from the shadow to the top of the pole is 43° . How tall is the poll?



6. A fire is spotted from two lookout stations that are 10 miles apart. The bearing from the first lookout station to the fire is $N 52^\circ E$. The bearing from the second lookout station to the fire is $N 37^\circ W$. Find the distance from each lookout station to the fire.

Lesson 3.10 - Supplement

7) The titanic is in the middle of the Atlantic ocean. If the ship travels 14 miles at a bearing of N 55° W it will hit an iceberg. If the ship travels 23 miles at a bearing of S 20° W it will hit a different iceberg. How far apart are the two icebergs? (round 2 decimal places) What is the bearing between the first iceberg and the second iceberg?

8) The bearing from A to B is S 30° E, and the bearing from B to C is N 65° E. An automobile traveling at 60 mph needs 1.5 hr to go from A to B and 2 hr to go from B to C. Find the distance from A to C.