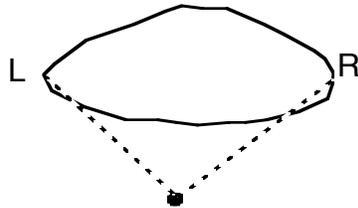
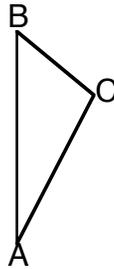


1) To measure the height of a hill, a surveyor spots two points on the ground in line with the hill and marks them A and B. From the top of the hill she measures the angle of depression to point A is 39.5° and the angle of depression to point B is 47° . On the ground, the distance between points A and B is 36 meters. How tall is the hill?

2) To measure the width of a crater, Nick marks a spot on the ground *outside* the crater. He measures the distance from the point outside the crater to point L is 55 ft and the distance from point A to point C is 49 ft. The angle formed by the two lines at point A is 96° . How wide is the crater?



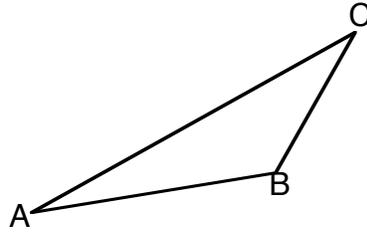
3) A boat race follows the path shown below, from marker A to B to C. From A to B is 8000 feet due north. From B to C is 3500 feet and C to A is 6500 feet. Find the bearings from B to C and from C to A.



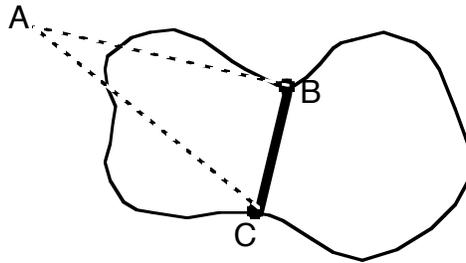
4) On a map, Minneapolis is 6.5 inches due west of Albany, Phoenix is 8.5 inches from Minneapolis, and Phoenix is 14.5 inches from Albany. Phoenix is farther west than both Minneapolis and Albany. Find:

- the bearing of Minneapolis from Phoenix.
- the bearing of Albany from Phoenix.

5) A plane flies 675 miles from A to B with a bearing of N 75° E. Then it flies 540 miles from B to C with a bearing of N 32° E as shown in the figure. Find the straight line distance and bearing from C to A.



6) A bridge is to be built across a lake, from point B to C in the figure shown. The bearing from B to C is S 41° W. From point A to point B, the bearing is S 74° E and the distance is 100 yards and the bearing from point A to point C is S 28° E. Find the distance from B to C.



7) Two fire towers, A and B are 18.5 miles apart. The bearing from A to B is N 65° E. A fire is spotted by rangers in both towers. The bearing from tower A to the fire is N 28° E; the bearing from tower B to the fire is N 16.5° W. Find the distance of the fire from each tower.