

WORKSHEET/2.5

An observer for a radar station is located at the origin of a coordinate system. For the point given, find the bearing of an airplane located at that point. Express the bearing using both methods.

1) (6, 0)

2) (6, -6)

Solve the problem.

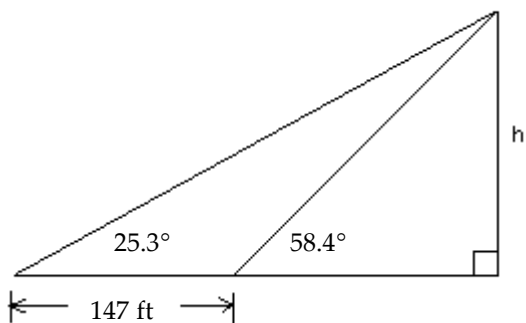
3) A fire is sighted due west of lookout A. The bearing of the fire from lookout B, 5.1 miles due south of A, is $N 48^\circ 22' W$. How far is the fire from B (to the nearest tenth of a mile)?

4) A boat sails for 4 hours at 15 mph in a direction $139^\circ 40'$. How far south has it sailed (to the nearest mile)?

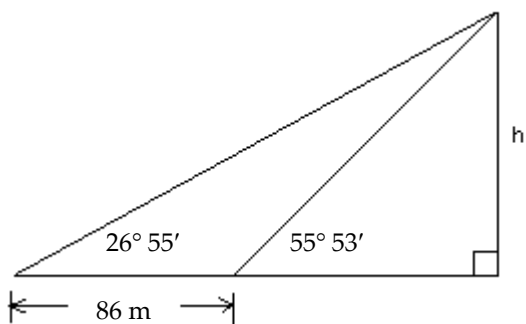
5) An airplane travels at 160 km/h for 4 hr in a direction of 306° from St. Louis. At the end of this time, how far west of St. Louis is the plane (to the nearest kilometer)?

6) A ship travels 99 km on a bearing of 10° , and then travels on a bearing of 100° for 156 km. Find the distance from the starting point to the end of the trip, to the nearest kilometer.

7) Find h as indicated in the figure. Round your answer to the hundredths place.



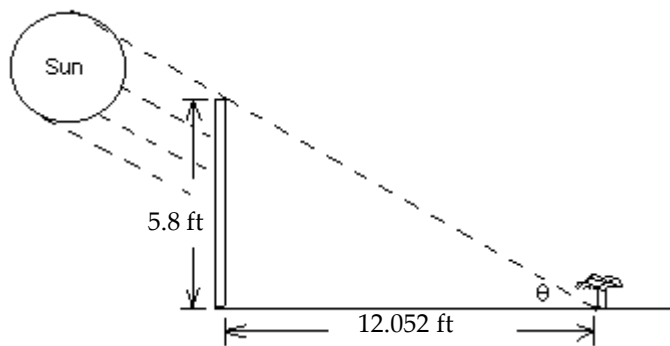
8) Find h as indicated in the figure. Round your answer to the hundredths place.



9) The angle of elevation from a point on the ground to the top of a tower is $37^\circ 52'$. The angle of elevation from a point 106 feet farther back from the tower is $24^\circ 9'$. Find the height of the tower. Round your answer to the hundredths place.

10) A person is watching a boat from the top of a lighthouse. The boat is approaching the lighthouse directly. When first noticed the angle of depression to the boat is $12^\circ 38'$. When the boat stops, the angle of depression is $50^\circ 11'$. The lighthouse is 200 feet tall. How far did the boat travel from when it was first noticed until it stopped? Round your answer to the hundredths place.

11) A 5.8-ft fence is 12.052 ft away from a plant in the direction of the sun. It is observed that the shadow of the fence extends exactly to the bottom of the plant. (See drawing) Find θ , the angle of elevation of the sun at that time. Round the measure of the angle to the nearest tenth of a degree.



Answer Key

Testname: WS2.5TST

- 1) 90° ; N 90° E or S 90° E
- 2) 135° ; S 45° E
- 3) 7.7 mi
- 4) 46 mi
- 5) 518 km
- 6) 185 km
- 7) 97.98 ft
- 8) 66.55 m
- 9) 112.26 ft
- 10) 725.58 ft
- 11) $\theta = 25.7^\circ$