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| 1. Lighthouse B is 8 miles east of lighthouse A. A boat leaves A and sails 6 miles. At this time, it is sighted from B. If the bearing of the boat from lighthouse B is S 71$°$ W, how far from lighthouse B is the boat? Round your answer to the nearest mile.
 | 1. You and a friend hike 1.3 kilometers due west from a campsite. At the same time, two other friends hike 1.7 kilometers at a heading of N 17$°$ W from the campsite. To the nearest tenth of a kilometer, how far apart are the two groups?
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| 1. An air traffic controller is tracking a plane 2.3 miles due north of the radar tower. A second plane is located 3.6 miles from the tower at a heading of S 72$°$W. To the nearest tenth of a mile, how far apart are the two planes?
 | 1. Two observers are 450 feet apart on opposite sides of a flagpole. The angles of elevation from the observers to the top of the pole are 23$°$ and 25$°$. Find the height of the flagpole to the nearest foot.
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| 1. Two fire-lookout stations are 15 miles apart, with station B directly west of station A. Both stations spot a fire. The bearing of the fire from station A is S 28$°$ W and the bearing of the fire from station B is S 49$°$ E. How far, to the nearest tenth of a mile, is the fire from each lookout station?
 | 1. The player waiting to receive a kickoff stands at the 7 yard line (point A) as the ball is being kicked 61 yards up the field from the opponent’s 32 yard line. The kicked ball travels 69 yards at an angle of 10 degrees to the right of the receiver (point B). Find the distance the receiver runs to catch the ball.
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| 1. The dimensions of a triangular flag are 15 inches by 24 inches by 29 inches. To the nearest tenth, what is the measure of the angle formed by the two shorter sides?
 | 1. A leaning wall is inclined at 4$°$ from vertical. At a distance of 25 feet from the wall, the angle of elevation to the top is 34$°$. Find the height of the wall to the nearest tenth of a foot.
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| 1. A 25-ft water slide has a 10.8-ft. ladder which meets the slide at a 100$°$angle. To the nearest tenth, what is the distance between the end of the slide and the bottom of the ladder?
 | 1. Two observers are 2.4 miles apart on opposite sides of a hot-air balloon. The angle of elevation from observer A is 30$°$ and the angle of elevation from observer B is 35$°$. Find the altitude of the balloon to the nearest tenth of a mile.
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| 1. After a wind storm, you notice that your 12-foot flagpole may be leaning, but you are not sure. From a point on the ground 10 feet from the base of the flagpole, you find that the angle of elevation to the top is 52$°$. Find the angle, to the nearest degree, that the flagpole makes with the ground and determine if it is leaning or not.
 | 1. Two airplanes flying together in formation take off in different directions. One flies due east at 340 mph, and the other flies N 12$°$ E at 360 mph. To the nearest tenth, how far apart are the two airplanes 1 hour after they separate, assuming that they fly at the same altitude?
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| 1. One side of a ravine is 18 feet long. The other side is 13 feet long. A 24-foot zip line runs from the top of one side of the ravine to the other. To the nearest tenth, at what angle do the sides of the ravine meet?
 | 1. Two ships leave a harbor at the same time. One ship travels on a bearing of N 14$°$ E at 12 miles per hour. The other ship travels on a bearing of S 74$°$ W at 9 miles per hour. To the nearest tenth of a mile, how far apart will the ships be after three hours?
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| 1. A surveyor needs to determine the distance between two points that lie on opposite banks of a river. Two points, A and C along one bank are 250 yards apart. The point B is on the opposite bank. Angle A is 64$°$ and angle C is 51$°$. Find the distance between A and B to the nearest tenth of a yard.
 | 1. The FCC is attempting to locate an illegal radio station. It sets up two monitoring stations, A and B, with station B 30 miles east of station A. Station A measures the illegal signal from the radio station as coming from a direction 42$°$ east of north. Station B measures the signal as coming from a point 40$°$ west of north. How far is the illegal radio station from monitoring stations A and B.
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