

HPC February 2, 2017



- Go over Applications Day 3 Questions
- Applications Day 4 – Assignment Due 2/3/17
- Check in Applications Day 1, Day 2 and Day 3
- Friday – practice for SSA on District Assessment
- Monday – LOS Formative Assessment
- Tuesday – Law of Cosines

Law of Sines Day 3 Answers

1. 264.4 yards
2. 184.3 feet
3. 56.0 feet
4. 343.0 feet

Law of Sines Day 4 Answers

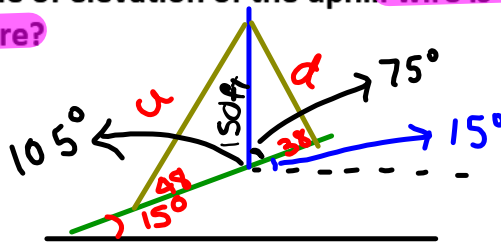
1. 64.4
2. 53.8
3. 3576.4 yds 3671.8 yds
- 5 4. 233.0 ft
- 7 5. 30.0 ft
- 9 6. 9.2 miles, 5.7 mi

The Law of Sines

Students will utilize the Law of Sines to find the missing sides and angles of acute and obtuse triangles.

Example 9: Applications

An antenna is to be placed on a hillside that has a slope of 15° . Guywires are to be placed 150 feet up on the tower. If the angle of elevation of the downhill wire is 38° and the angle of elevation of the uphill wire is 48° , how long is each wire?



$$\frac{\sin 48^\circ}{150} = \frac{\sin 105^\circ}{u}$$

$$u = 195.0 \text{ ft}$$

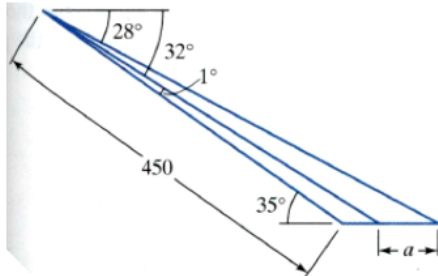
$$\frac{\sin 75^\circ}{d} = \frac{\sin 38^\circ}{150}$$

$$d = 235.3 \text{ ft}$$

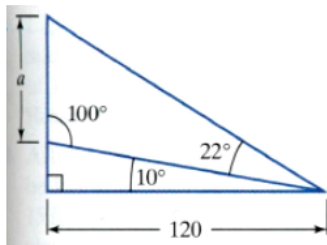
Use the Law of Sines to solve the following problems. Name _____

For problems 1 and 2, find a to the nearest tenth.

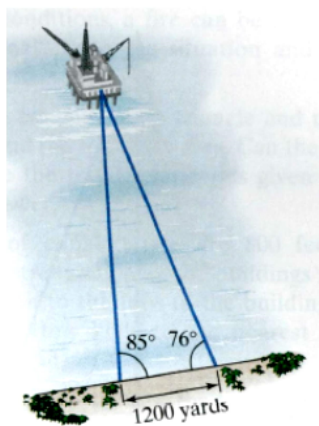
1.



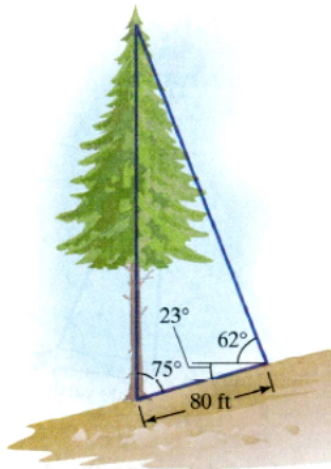
2.



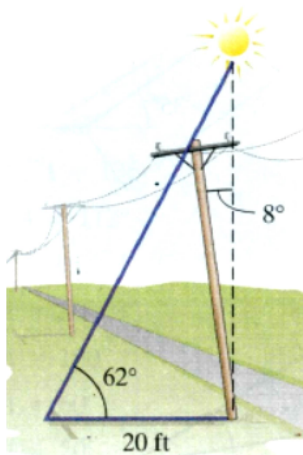
3. The figure shows a 1200-yard-long sand beach and an oil platform in the ocean. The angle made with the platform from one end of the beach is 85° and from the other end is 76° . Find the distance of the oil platform, to the nearest tenth of a yard, from each end of the beach.



5. A pine tree growing on a hillside makes a 75° angle with the hill. From a point 80 feet up the hill, the angle of elevation to the top of the tree is 62° and the angle of depression to the bottom is 23° . Find, to the nearest tenth of a foot, the height of the tree.



7. When the angle of elevation of the sun is 62° , a telephone pole that is tilted at an angle of 8° directly away from the sun casts a shadow 20 feet long. Determine the length of the pole to the nearest tenth of a foot.



9. Two fire-lookout stations are 10 miles apart, with station B directly East of station A. Both stations spot a fire. The bearing of the fire from station A is 25° and the bearing of the fire from station B is 304° . How far, to the nearest tenth of a mile, is the fire from each lookout station?

