

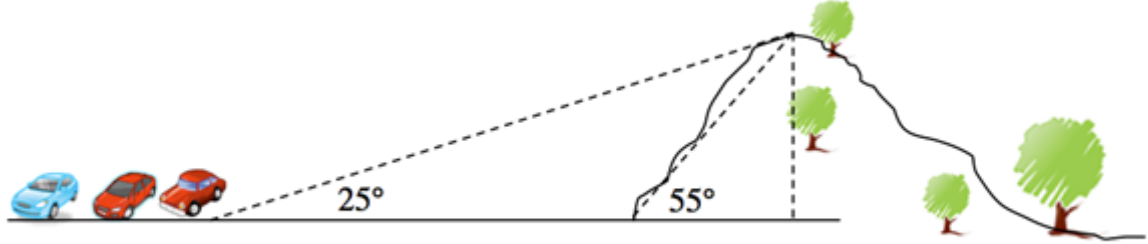
Chapter 5 - Do you know this yet?

1. Several lookout posts have been built in the mountains outside of town, where rangers watch for any sign of forest fires. Recently, the rangers at lookout posts A and B reported a fire at point C. The distance from A to B is known to be 758 meters. From post A, the angle between post B and the fire is 36° . From post B, the angle between post A and the fire is 55° .

a) Draw a careful diagram representing this information.

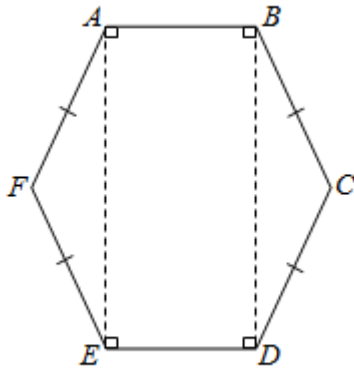
b) How far is post A from the fire? Show all work and be complete. Be sure to include units.

2. From the parking lot at the Red Hill Shopping Center, the angle to the top of the hill is about 25° . From the base of the hill the angle of elevation to the top of the hill is 55° . The horizontal distance between these two sight points is 740 feet. How high is Red Hill?

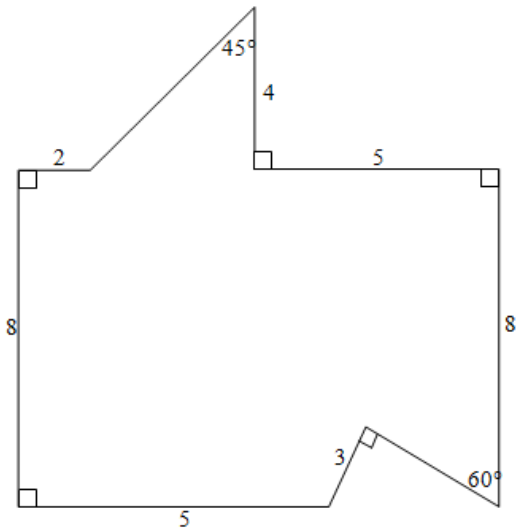


3. Write a question that requires the use of the Law of Sines to solve. Then solve your question. Be original (in other words, you cannot just copy a problem that you have already seen before), complete and correct, and make sure it is a **question**.

4. In the figure below, $m\angle FAE = 30^\circ$, $FA = 10\text{ cm}$, and $AB = 5\text{ cm}$. Calculate the area of the hexagon. Show all work. Label units correctly and organize your work neatly.



5. Calculate the perimeter and area of the figure below. Show all work and organize your work neatly. Note: Drawing is not drawn to scale.



Perimeter = _____

Area = _____

6. Cecilia has come up with a great game she wants to teach all her friends. She says “It’s easy! I’ll be player A, and you can be player B. We’ll roll two dice, and make a fraction out of the number that is less than or equal to one. If the fraction is in lowest terms, I’ll get one point. If the fraction is NOT in lowest, you’ll get one point. See? Easy!” (Note: any number with 1 in the denominator is considered to be in lowest terms.)

The game might be easy to play, but is it fair? Justify your answer completely.

7. Sammy the rat is trying to learn the new maze below. If he randomly chooses a path each time the path forks, which room is the most likely to walk into? Justify your answer by showing the probability that he ends up in each room.

