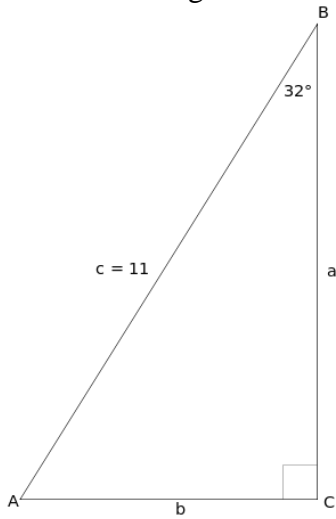


1. Solve the triangle:

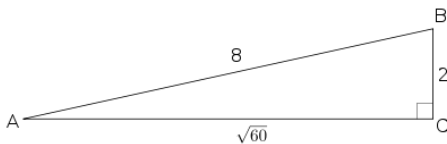
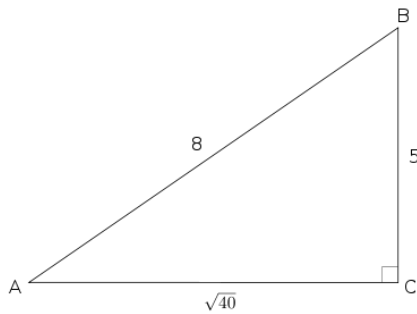


2. Two friends are writing practice problems to study for a trigonometry test. Sam writes the following problem for his friend Anna to solve:

In right triangle ABC , the measure of angle C is 90 degrees, and the length of side c is 8 inches. Solve the triangle.

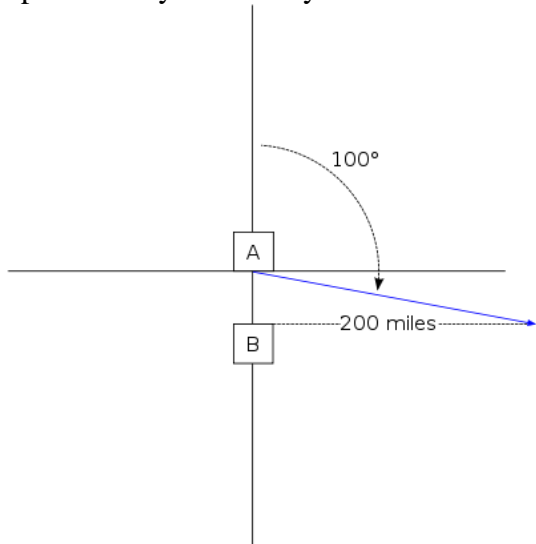
Anna tells Sam that the triangle cannot be solved. Sam says that she is wrong. Who is right? Explain your thinking.

3. Use the Pythagorean Theorem to verify the sides of the triangle in example 2.

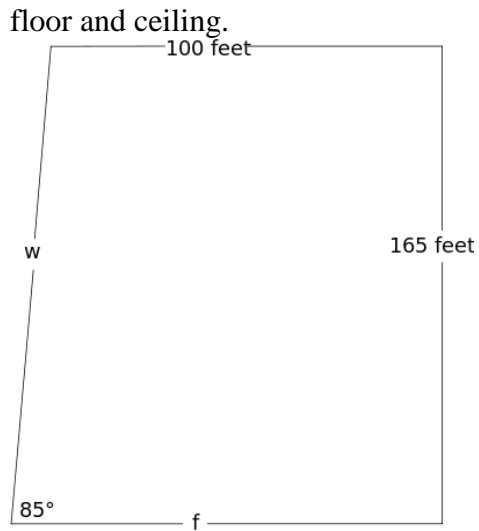


4. The angle of elevation from the ground to the top of a flagpole is measured to be 53° . If the measurement was taken from 15 feet away, how tall is the flagpole?
5. From the top of a hill, the angle of depression to a house is measured to be 14° . If the hill is 30 feet tall, how far away is the house?

6. An airplane departs city *A* and travels at a bearing of 100° . City *B* is directly south of city *A*. When the plane is 200 miles east of city *B*, how far has the plane traveled? How far apart are city *A* and City *B*?

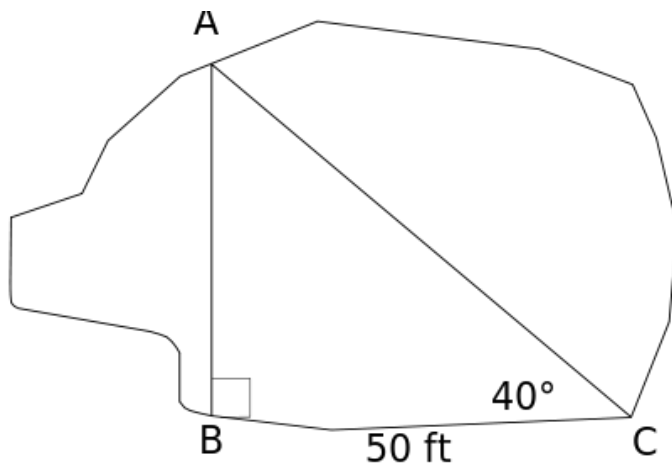


7. The modern building shown below is built with an outer wall (shown on the left) that is not at a 90° -degree angle with the floor. The wall on the right is perpendicular to both the



What is the length of the slanted outer wall, w ? What is the length of the main floor, f ?

8. A surveyor is measuring the width of a pond. She chooses a landmark on the opposite side of the pond, and measures the angle to this landmark from a point 50 feet away from the original point. How wide is the pond?



9. Find the length of side x :

