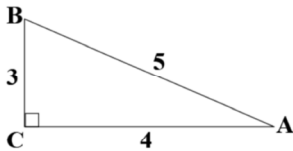


1. Use the triangle to find $\sin^2 A + \cos^2 A$.



2. Use your calculator to find the following:

- a. $\sin^2 53^\circ + \cos^2 53^\circ$
b. $\sin^2 114^\circ + \cos^2 114^\circ$

3. Three friends are camping in the woods, Bert, Ernie and Cookie Monster. They each have their own tent and the tents are set up in a triangle. Bert and Ernie are 10 m apart. The angle formed at Bert's tent is 30 degrees. The angle formed at Cookie Monster's tent is 105 degrees. How far apart are Ernie and Cookie Monster?

4. A post is supported by two wires (one on each side going in opposite directions) creating an angle of 80 degrees between the wires at the top of the post. The ends of the wires are 12m apart on the ground with one wire forming an angle of 40 degrees with the ground. Find the lengths of the wires.
5. Jack and Jill both start at point A. They each walk in a straight line along paths that form an angle of 105 degrees between the two paths. After 45 minutes Jack has walked 4.5 km and Jill has walked 6 km. How far apart are they?