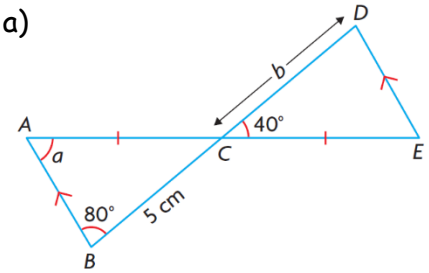
MPM 2D1 Name: _____

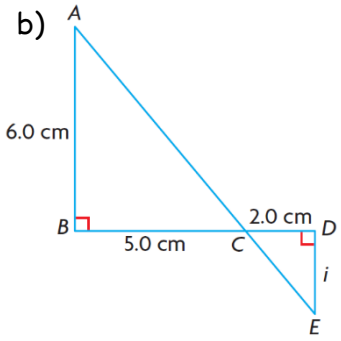
Similar Triangles

1. Determine the value of each lower case letter.

a)

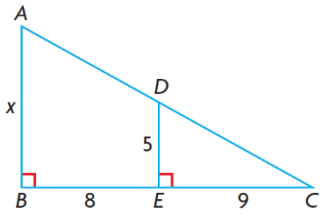


b)

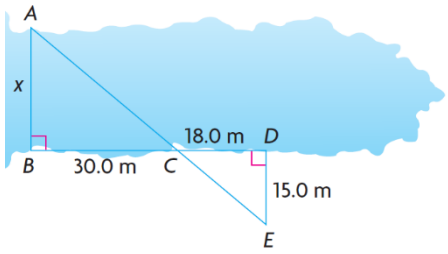


2. Miki is standing in a parking lot on a sunny day. He is 1.8 m tall and casts a shadow that is 5.4 m long. Draw a diagram, then determine the length of the shadow of a nearby tree that is 12.2 m tall.

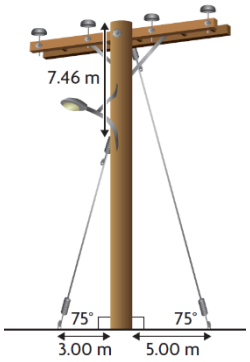
3. Examine the two similar triangles in the diagram.
   a) Explain how you know that these triangles are similar.
   b) Determine the value of x.



4. How wide is this bay?



5. A telephone pole is supported by a guy wire, as shown in the diagram at the right, which is anchored to the ground 3 m from the base of the pole. The guy wire makes a 75° angle with the ground and is attached to the pole 7.46 m from the top. Another guy wire is attached to the top of the pole. This guy wire also makes an angle of 75° with the ground 5 m from the base of the pole. Determine the height of the pole.



6. Surveyors need to determine the height of a hill. They set up a laser measuring device on a pole that is 1 m tall and shine the laser toward the top of a second pole, which is 1.6 m tall. Then they adjust the distance between the two poles until the laser hits the top of the longer pole and the top of the hill. The 1.6 m pole is 415 m from the center of the hill. The two poles are 12 m apart. Determine the height of the hill.