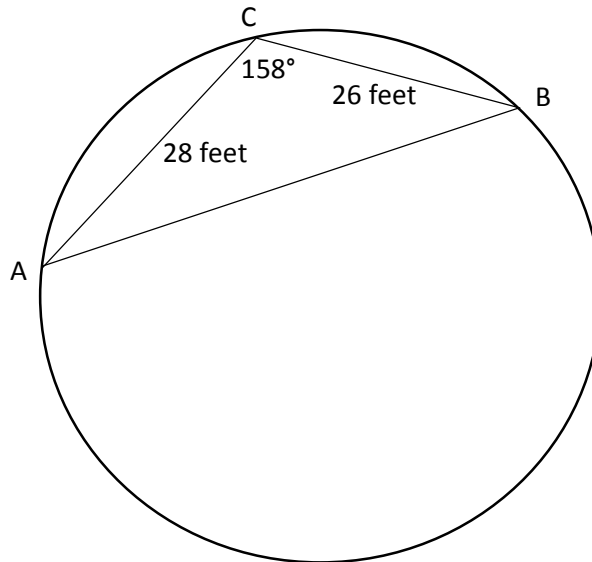


**Answer on question 34178 – Math – Geometry**

An engineer wishes to measure the diameter of a hole in the ground, but his tape measure isn't long enough. He places stakes at points A and B on opposite sides of the hole, then places a third stake at a point C at the edge of the hole somewhere between A and B. His tape is long enough to measure the distance from C to A at 28 feet and the distance from C to B at 26 feet. From the point C, the angle between the lines AC and CB is  $158^\circ$ . How far is it from A to B?

**Solution**



Using the law of cosine we get

$$AB^2 = 28^2 + 26^2 - 2 * 28 * 26 * \cos 158^\circ \approx 2810 \text{ feet}$$

$$AB \approx 53 \text{ feet}$$

**Answer:** 53 feet.