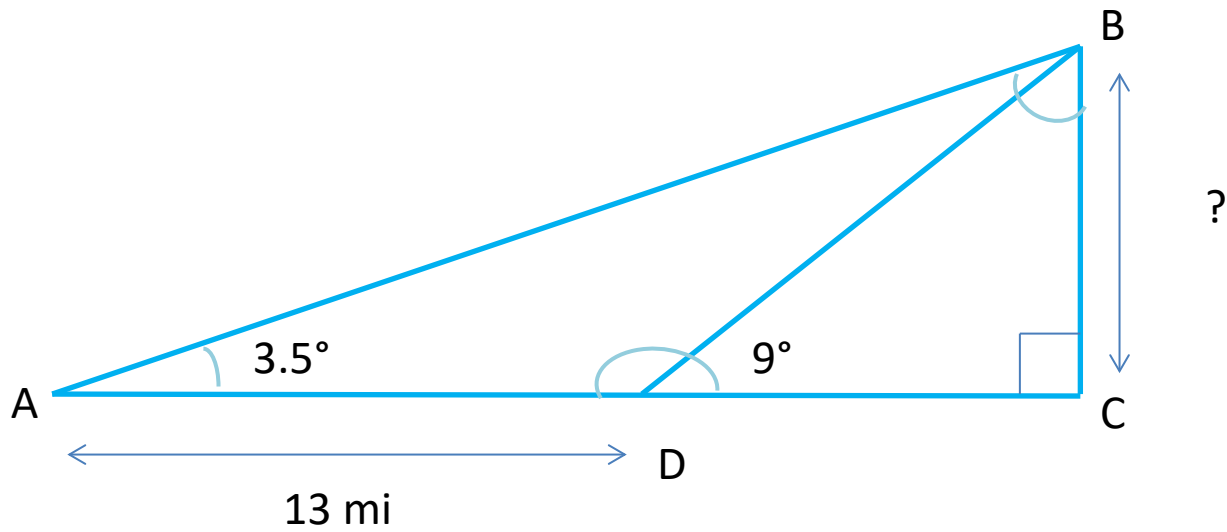


HEIGHT OF A MOUNTAIN



Not drawn in scale

resolution

We know that the angle ADC is 180 degrees ,and given that the angle BDC is 9 degrees we can find the angle ADB.

Now, knowing that the sum of the internal angles of a triangle is 180 degrees, we can find the angle ABD, and we can apply the Law of sines to find the side BD.

Now we can use the first theorem on right triangles to find the side BC, that is also the 'height of the mountain'.

$$ADB = 180^\circ - 9^\circ = 171^\circ$$

$$ABD = 180^\circ - 171^\circ - 3.5^\circ = 5.5^\circ$$

$$BD = \sin 3.5 \div \sin 5.5 * 13 = 8.28 \text{ mi}$$

$$BC = BD * \sin 9^\circ = 1.295 \text{ mi}$$

By
Valentina Giannascoli ,Aurora Cabras, Benedetta Di Bernardo, Cecilia Di Vittorio
IIF