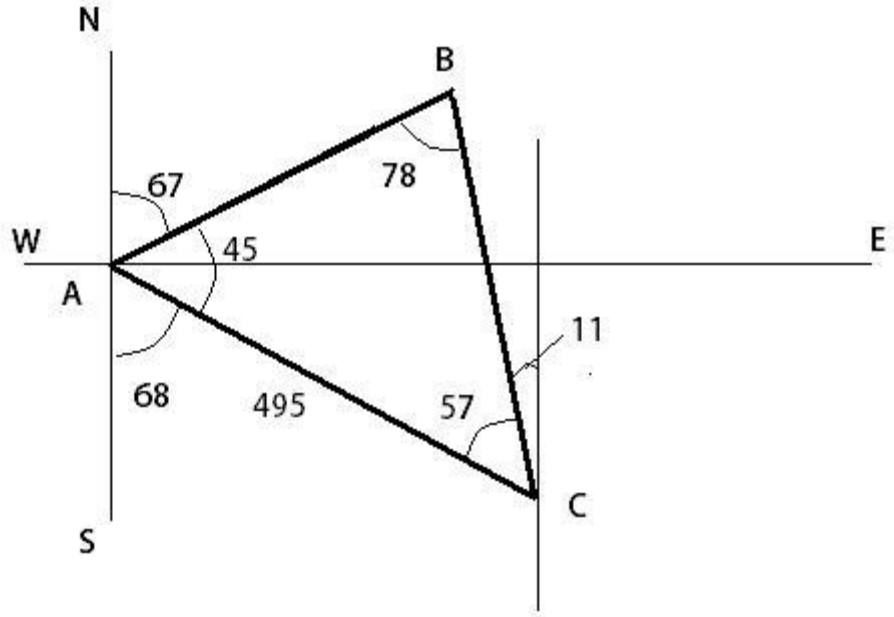
Answer on Question #45509 – Math - Trigonometry

Round answer to two significant digits.

House B is located at a bearing of N67°E from house A. House C is 495 meters from house A at a bearing of S68°E. House B is located at a bearing of N11°W from house C. Find the distance from house A to house B.

Solution.



$\angle BAC = 180^o - 67^0 - 68^0 = 45^0$,

$\angle ACB = 68^0 - 11^0 = 57^0$

$\angle ABC = 180^o - 57^0 - 45^0 = 78^0$

Now use Law of sines to determine side AB:

$$\frac{AB}{sin57^0} = \frac{AC}{sin78^0} \rightarrow AB = \frac{ACsin57^0}{sin78^0} = \frac{495 * 0.839}{0.978} \approx 425\ m.$$