Answer on Question #55785-Physics-Other

An airplane flies 169 km due west from city A to city B and then 233 km in the direction of 36.9 ∘ north of west from city B to city C.

What is the distance between city A and city C?

Solution

The distance d between city A and city C is

$$d = \sqrt{x^2 + y^2},$$

where $x = 169 + 233 \cos 36.9° \ = 355 \ km$ and $y = 233 \sin 36.9° = 140 \ km.$

$$d = \sqrt{355^2 + 140^2} = 382 \ km.$$

Answer: 382 km.