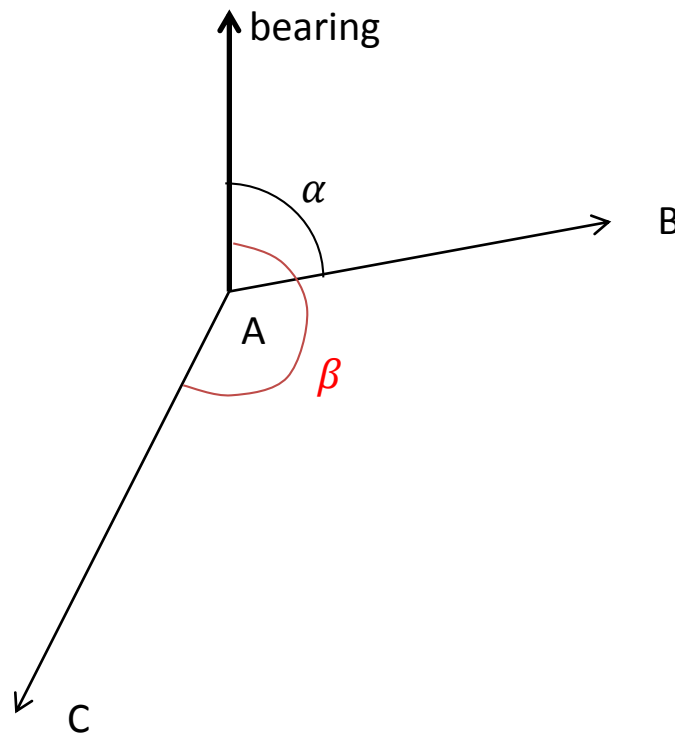


Answer on Question # 41854 – Math – Trigonometry

Andrea and Carlos left the airport at the same time. Andrea flew at 190 mph on a course with bearing of 80° , and Carlos flew at 240 mph on a course with a bearing of 210° .

How far apart were they after 4 hours?

Solution:



$$\angle\alpha = 80^\circ, \quad \angle\beta = 210^\circ$$

$$\angle CAB = \angle\beta - \angle\alpha = 130^\circ$$

AB – distance which flew Andrea

AC – distance which flew Carlos

$$AB = 190 * 4 = 760 \text{ km}, AC = 240 * 4 = 960 \text{ km}$$

We need to find BC:

Use the law of cosines in the triangle CAB:

$$CB^2 = CA^2 + BA^2 - 2 * AB * AC * \cos\angle CAB \approx 577600 + 921600 - 1459200 * (-0.642787609) \approx 2437155.679$$

$$CB = \sqrt{2437155.679} \approx 1561.1 \text{ km}$$

Answer: 1561.1 km