

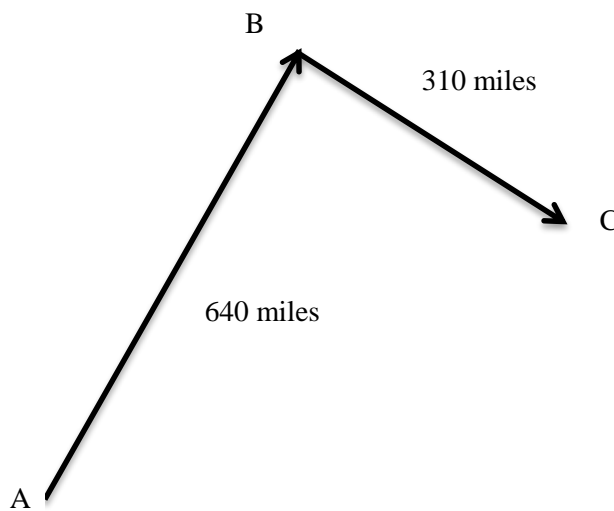
Answer on Question #45508 – Math - Trigonometry

Question:

Round your answer to two significant digits.

A plane leaves airport A and travels 640 miles to airport B at a bearing of N32°E. The plane leaves airport B and travels to airport C 310 miles away at a bearing of S72°E. Find the distance from airport A to airport C

Answer:



Distance from airport A to airport C in north direction equals:

$$d_n = 640 \cdot \cos 32^\circ - 310 \cdot \cos 72^\circ = 447 \text{ miles}$$

Distance from airport A to airport C in east direction equals:

$$d_e = 640 \cdot \sin 32^\circ + 310 \cdot \sin 72^\circ = 634 \text{ miles}$$

Therefore, the total distance (using Pythagorean theorem):

$$d = \sqrt{d_n^2 + d_e^2} \cong 780 \text{ miles}$$

Answer: 780 miles