Answer on Question #52456, Engineering, Other

A man walk 5.0m due east and then 10.0m N 30° E. find his resultant displacement.

Solution.

From point A man goes 5m due east and comes to point B. From point B he goes 10m N 30° E to point C.

So we have ABC triangle, with angle B = 120° = 90+30 (90 from east to north).and we need to calculate distance AC. Using cosine theorem:

$$AC = \sqrt{AB^2 + BC^2 - 2*AB*BC*cos(120°)} = \sqrt{25 + 100 - 2*5*10*\left(-\frac{1}{2}\right)} = \sqrt{175} = 13.23m$$

Answer. 13.23m