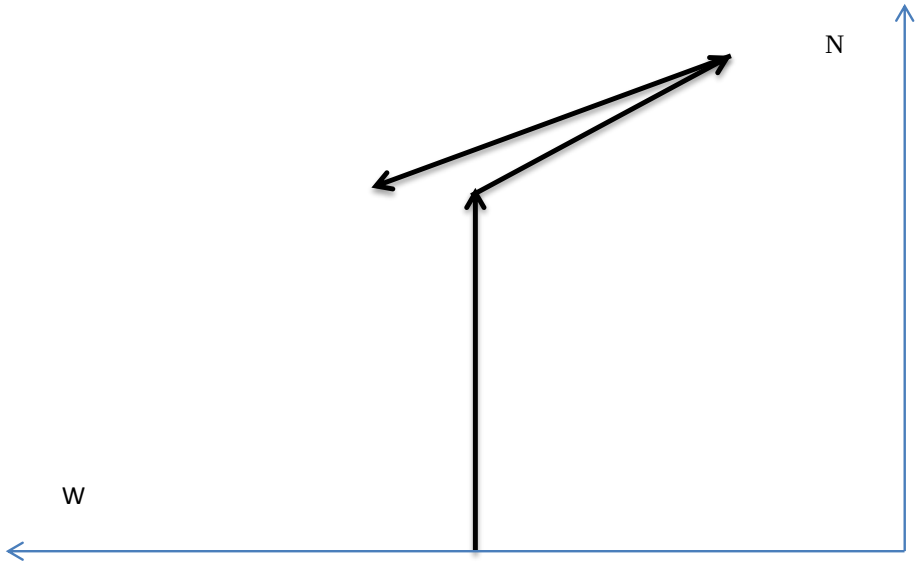
A hunter walks 225 m towards the north, then 125m 35 degrees N of E, then 145m 25 degrees S of W. What is his resultant displacement? You must use component method.



North component of vector equals:

$$v_N = |v| * \cos\theta$$

where θ – angle between v and north.

West component of vector equals:

$$v_N = |v| * \cos\theta$$

where θ – angle between v and west.

Total displacement to north equals:

$$225 + 125 * \sin 35 - 145 * \sin 25 = 235.4\ m$$

Total displacement to west equals:

$$0 - 125 * \cos 35 + 145 * \cos 25 = 29.0\ m$$

Resultant displacement equals:

$$D = \sqrt{235.4^2 + 29.0^2} = 237.2\ m$$

Answer: $237.2\ m$