

Physics 101Rec
Quiz#2
Chapter 3a

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Name: Key Id: _____ Sect: _____

A hiker begins a trip by first walking 25.0 km south, then 10.0 km in a direction 60.0° east of south, then 30.0 km west.

Draw a figure for the three paths.

What is the net displacement of the hiker in **unit vector notation**?

$$\vec{R} = R_x \hat{i} + R_y \hat{j}$$

$$R_x = A_x + B_x + C_x$$

$$R_y = A_y + B_y + C_y$$

$$\vec{A} = -25 \hat{j}$$

$$\vec{B} = 10 \cos 33.0^\circ \hat{i} + 10 \sin 33.0^\circ \hat{j}$$

$$\vec{C} = -30 \hat{i}$$

$$\Rightarrow R_x = -21.3 \text{ km}$$

$$R_y = -30.0 \text{ km}$$

$$\boxed{\vec{R} = -21.3 \hat{i} - 30 \hat{j}} \text{ km}$$

