

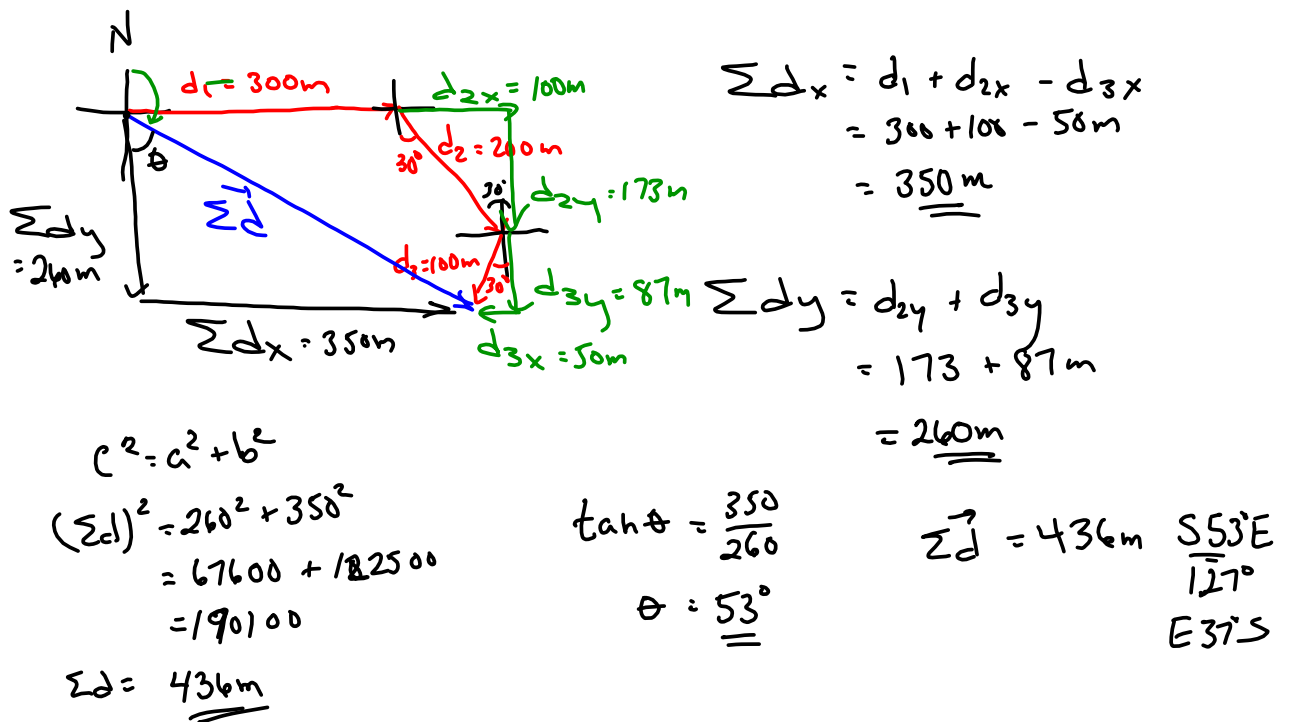
Adding Multiple Vectors

Homework questions? #5 and #6.

Examples of Adding Multiple Vectors

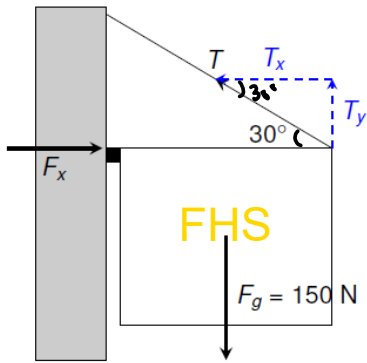
Example 1:

A hiker walks 300 m E, then 200 m S30°E and then 100 m S30°W. What is her final displacement? How far, and which way will she have to go to return to the starting point?



Example 2 (an example in "statics"):

Consider a display sign hung by a wire and a bracket as shown. What is the tension in the wire and the force applied by the bracket?



$$\sum \vec{F} = \odot \Rightarrow \sum \vec{F}_x = \odot$$

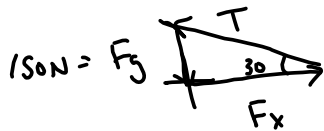
$$\sum \vec{F}_y = \odot$$

$$F_x = T_x$$

$$T_y = F_g = 150\text{N}$$

$$\begin{aligned} F_x &= T \cos 30^\circ \\ &= 300\text{N} \cos 30^\circ \\ &= \underline{\underline{260\text{N}}} \end{aligned}$$

$$\begin{aligned} T \sin 30^\circ &= 150\text{N} \\ T &= \underline{\underline{300\text{N}}} \end{aligned}$$



Homework: p. 467 # 7(a) and (b), 8 and 9

