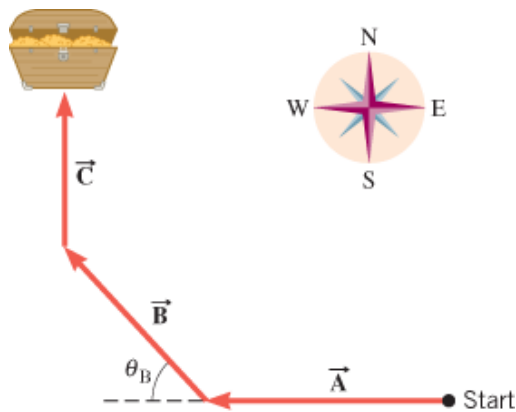


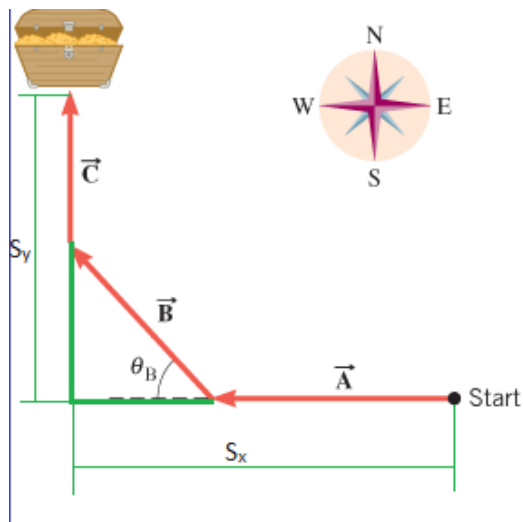
You are on a treasure hunt and your map says "Walk due west for 57.1 paces, then walk 70.0° north of west for 71.3 paces, and finally walk due north for 64.6 paces." What is the magnitude of the component of your displacement in the direction (a) due north and (b) due west?

Solution:

To :



After :



The magnitude of the component of displacement due west $S_x = 57.1 + 71.3 \cdot \cos(70^\circ) = 81.5$ paces

The magnitude of the component of displacement due north $S_y = 71.3 \cdot \sin(70^\circ) + 64.6 = 131.6$ paces