

Vector Application

Stations

[CCSS.Math.Content.HSN.VM.A.3](#)

(+) Solve problems involving velocity and other quantities that can be represented by vectors.

Station 1

1. To get to the Park Ranger Station, Marci hiked 3.2 miles at a bearing of $S32^\circ E$ and then hiked 4.7 miles at a bearing of $N17^\circ E$. (a) How far from her starting point is the Park Ranger Station? (b) Relative to her starting point, what is the bearing of the Park Ranger Station?

Station 2

2. To get to a supply depot, Raymond drove 48.2 miles at a bearing of $S37.0^\circ W$ and then drove 23.7 miles at a bearing of $N12.0^\circ W$. (a) How far from his starting point is the supply depot? (b) Relative to his starting point, what is the bearing of the supply depot?

Station 3

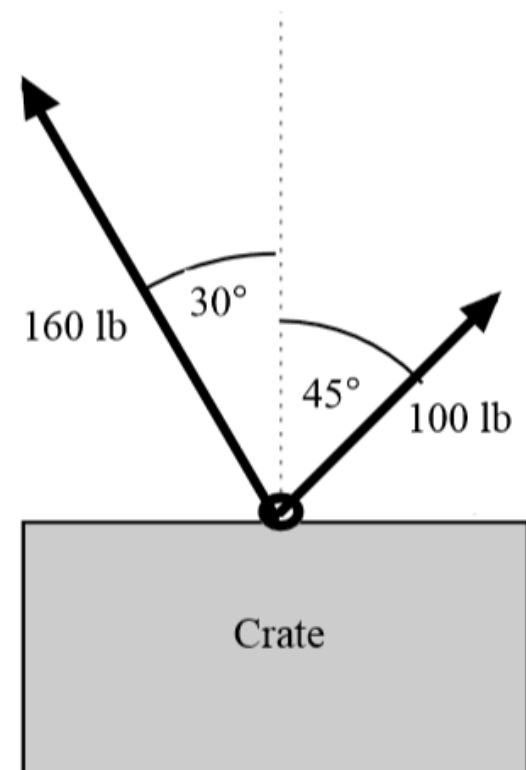
3. An airplane with an airspeed of 197 miles per hour heads $N42.0^\circ W$ through a wind that is blowing at 34.0 miles per hour $S67.0^\circ W$. What is (a) the groundspeed and (b) the true direction of the airplane?

Station 4

4. An airplane with an airspeed of 205 miles per hour heads $S37.0^\circ W$ through a wind that is blowing at 12.0 miles per hour $S23.0^\circ E$. What is (a) the groundspeed and (b) the true direction of the airplane?

Station 5

5. Two men pull on ropes attached to a ring in the top of a crate. One of the men pulls with a force of 160 lb at an angle of 30° to the left of the vertical. The other man pulls with a force of 100 lb at an angle of 45° to the right of vertical. What single force (amount and direction) could replace the two men's efforts? Round the force to the nearest tenth of a pound and the angle to the nearest hundredth of a degree.



Station 6

6. Two men pull on ropes attached to a ring in the top of a crate. One of the men pulls with a force of 95 lb at an angle of 35° to the left of the vertical. The other man pulls with a force of 75 lb at an angle of 55° to the right of vertical. What single force (amount and direction) could replace the two men's efforts? Round the force to the nearest tenth of a pound and the angle to the nearest hundredth of a degree.

