14. Vector $\vec{A}$ has a magnitude of 35.0 units and points in the direction 325° counterclockwise from the positive x axis. Calculate the x and y components of this vector.

15. A vector has an x component of -25.0 units and a y component of 40.0 units. Find the magnitude and direction of this vector.

16. A person walks 25.0° north of east for 3.10 km. How far would she have to walk due north and due east to arrive at the same location?

18. A girl delivering newspapers covers her route by traveling 3.00 blocks west, 4.00 blocks north, and then 6.00 blocks east. (a) What is her resultant displacement? (b) What is the total distance she travels?

63. $\boxed{\text{S}}$ A rectangular parallelepiped has dimensions a, b, and c as shown in Figure P3.63. (a) Obtain a vector expression for the face diagonal vector $\vec{\mathbf{R}}_1$. (b) What is the magnitude of this vector? (c) Notice that $\vec{\mathbf{R}}_1$, $c\hat{\mathbf{k}}$, and $\vec{\mathbf{R}}_2$ make a right triangle. Obtain a vector expression for the body diagonal vector $\vec{\mathbf{R}}_2$.
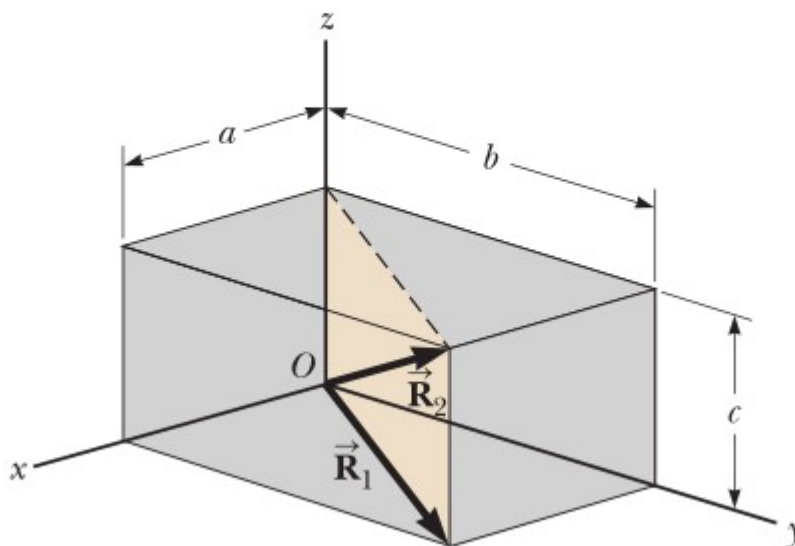

Figure P3.63