Given
\(m = 50 \text{ kg}\)
\(v = 40 \text{ km/h}\)

Solution
Find the force of air on the parachute.

Since the jumper is traveling at constant velocity, the acceleration is zero. Therefore, from Newton’s 2nd law
\[
\sum \vec{F} = \vec{F}_{\text{chute}} + \vec{W} = m\vec{a} = 0
\]
Then
\[
\vec{F}_{\text{chute}} = -\vec{W} = -m\vec{g} = -(50 \text{ kg})(-9.8\hat{j} \text{ m/s}^2)
\]
\[
\vec{F}_{\text{chute}} = 490\hat{j} \text{ N}
\]