

6. Since $\vec{v} = \text{constant}$, we have $\vec{a} = 0$, which implies

$$\vec{F}_{\text{net}} = \vec{F}_1 + \vec{F}_2 = m\vec{a} = 0 .$$

Thus, the other force must be

$$\vec{F}_2 = -\vec{F}_1 = (-2 \text{ N}) \hat{i} + (6 \text{ N}) \hat{j} .$$