

28. The fact that they are connected by a spring is not used in the solution. We use Eq. 9-17 for \vec{v}_{com} :

$$\begin{aligned} M\vec{v}_{\text{com}} &= m_1\vec{v}_1 + m_2\vec{v}_2 \\ 0 &= (1.0)(1.7) + (3.0)\vec{v}_2 \end{aligned}$$

which yields $|\vec{v}_2| = 0.57$ m/s. The direction of \vec{v}_2 is opposite that of \vec{v}_1 (that is, they are both headed towards the center of mass, but from opposite directions).