5.29. **Visualize:**

Motion diagrams

(a) (b)
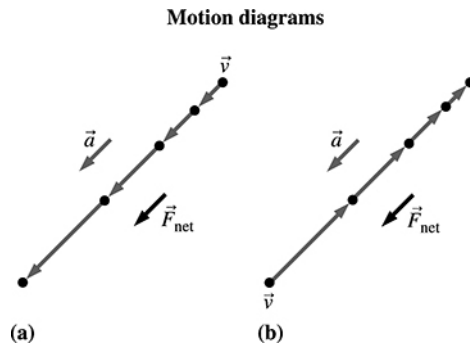
The velocity vector in figure (a) is shown downward and to the left. So movement is downward and to the left. The velocity vectors get successively longer, which means the speed is increasing. Therefore the acceleration is downward and to the left. By Newton's second law $\vec{F} = m\vec{a}$, the net force must be in the same direction as the acceleration. Thus, the net force is downward and to the left.

The velocity vector in (b) is shown to be upward and to the right. So movement is upward and to the right. The velocity vector gets successively shorter, which means the speed is decreasing. Therefore the acceleration is downward and to the left. From Newton's second law, the net force must be in the direction of the acceleration and so it is directed downward and to the left.