



Fig. A

*Calibrate the floor.*

*Observe graphs on computer monitor.*

**Step 3:** Adjust the sonic ranger software so that it displays a distance vs. time plot. Point the sonic ranger at a student standing at the 5-meter mark of the tape. Calibrate the tape by marking where the computer registers 1 m, 2 m, and so on.

**Step 4:** Stand on the 1-meter mark. Always face the sonic ranger and watch the monitor. Back away from the sonic ranger slowly and observe the graph made. Repeat, backing away from the sonic ranger faster, and observe the graph made.

1. How do the graphs compare?

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**Step 5:** Stand at the far end of the tape. Slowly approach the sonic ranger and observe the graph plotted. Repeat, walking faster, and observe the graph plotted.

2. How do the graphs compare?

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**Step 6:** Back away from the sonic ranger slowly; stop; then approach quickly.

3. Sketch the shape of the resulting graph.