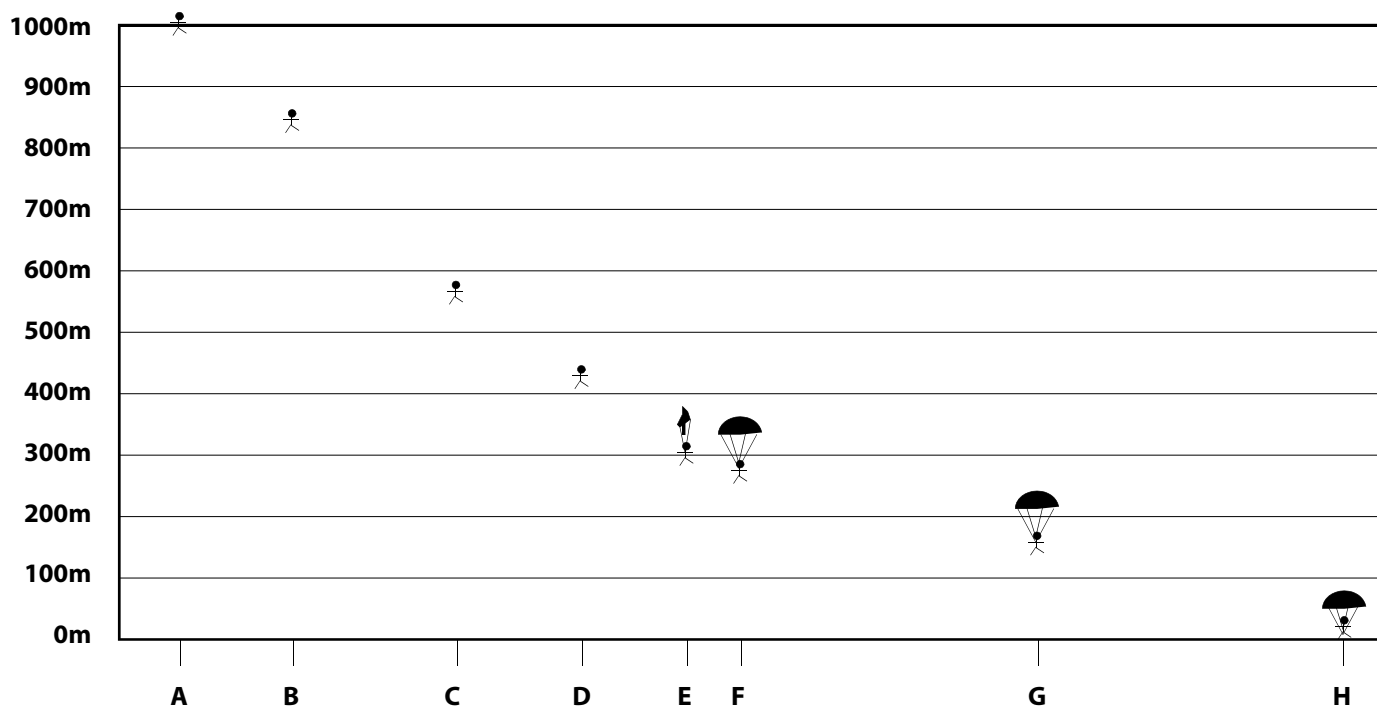


PhyzJob: Sky Diver Physics



A sky diver is shown below in multiple diagrams indicating his/her position at different times throughout his/her journey from a stationary balloon (not shown) to the ground.



The motion at each point *in time* is described below.

A. The sky diver has just stepped out of the balloon and begins to fall.

B. The sky diver is falling with increasing speed. As the sky diver's speed increases, however, his/her acceleration decreases. Why is this?

C. The sky diver reaches terminal speed.

D. The sky diver continues to fall at terminal speed.

E. The sky diver pulls his/her ripcord to release the parachute.

F. The parachute takes full effect, slowing the sky diver down to a much lower speed: this is the new terminal speed for the sky diver with deployed parachute. Notice the effect of the parachute is to slow the diver; it does not magically lift the diver up to higher elevations. The sky diver travels in only one vertical direction during the entire trip: down.

G. The sky diver (now a parachutist) enjoys the leisurely glide down to the ground, traveling at the new (low) terminal speed.

H. The parachutist lands. At this point, his/her feet are making initial contact with the ground.

INSTRUCTIONS: Using the information provided, make graphs on the pre-formatted axes on the back.

1. Show how the velocity of the sky diver varies with time.
2. Show how the drag force varies with time.
3. Show how the weight force varies with time.
4. Show how the net force varies with time.
5. Show how acceleration varies with time.

NOTE: Initial values have been plotted for you. And remember that + is up, - is down.

