1.              A 25 kg couch is pushed across the floor with a constant horizontal force of 7 N for 3 s.

a.     If it starts from rest, what is its’ final speed?

b.     How far did you push it?

**Representations (graphs, motion maps, sketches with variables labeled)**

**Variables and Equations**

**Solution (show all reasoning and/or math)**

**Reasonability check**

When throwing a rock vertically upward, my hand moves through a distance of about 1.2 m before the rock leaves my hand. The 0.95 kg rock reaches a maximum height of about 23 m above my hand. What was the average force that my hand exerted on the rock?

**Representations (graphs, motion maps, sketches with variables labeled)**

**Variables and Equations**

**Solution (show all reasoning and/or math)**

**Reasonability check**

A skier is going down a 30° smooth slope. There is a horizontal headwind blowing in the skier’s face. If the skier starts with a 15 m/s velocity down the hill, and the slope length is 100 m, what will her final velocity be?

**Representations (graphs, motion maps, sketches with variables labeled)**

**Variables and Equations**

**Solution (show all reasoning and/or math)**

**Reasonability check**