7. (15 pts) Consider a glider moving back and forth on a level air track as shown below and demonstrated in class.

\[ X \]

At each end of the track there are small spring "bumpers". Assume that the glider bounces off a bumper perfectly each time it hits one. To make the situation more specific, assume the speed of the glider between bounces is 0.5 meters/sec, the mass of the glider is 0.1 kg, the length of the glider is 15 cm, and the distance between bumpers is 2.15 meters. Finally, assume that the glider leaves the left bumper \((x = 0)\) at the time \(t = 0\). Sketch on the next page \(x(t), v_x(t),\) and \(a_x(t)\) for the glider motion. Indicate and give values to relevant times, distances, and velocities on your graph. Neglect the size of the bumper springs. Your picture should show at least 2 bounces off the right bumper.