1a) An automobile traveling 95 km/h overtakes a 1.30-km-long train traveling in the same direction on a track parallel to the road.
If the train's speed is 75 km/h, how long does it take the car to pass it, and how far will the car have traveled in this time?

      1.30km/(95km/h - 75km/h) = 0.065h => 3min 54s => 234s
      95km/h * 0.065h = 6.175km => 6175m

Simulated Solution with time step of 1/60:
      6171.55m
      233.854s

Problem: Weirdly enough in only this simulation I run into the problem of varying solutions that don't converge when changing the time step

b) Opposite Direction?
      1.30/(95km/h + 75km/h) = 0.007647h => 27.5s
      95km/h * 0.007647h = 0.7265km => 726 m

Simulated Solution with time step of 1/60:
      726.58m
      27.53s

2) Suppose you adjust your garden hose nozzle for a fast stream of water.
You point the nozzle vertically upward at a height of 1.8 m above the ground.
When you quickly turn off the nozzle, you hear the water striking the ground next to you for another 2.5 s.
What is the water speed as it leaves the nozzle?

      $s = v * t + \frac{1}{2} * a * t^2$
      -1.8m = 2.5s * v + ((-9.81 m/s²)/2) * 2.5²
      v = 11.54 m/s

Simulated Solution with time step of 1/500:
      11.536 m/s

3) A rescue plane wants to drop supplies to isolated mountain climbers on a rocky ridge 235 m below.
If the plane is traveling horizontally with a speed of 250 km/h (69.4 m/s), how far in advance of the recipients (horizontal distance) must the goods be dropped

Time to get to the ground:
      //no velocity

235m = ((-9.81 m/s²)/2) * t²
t = 6.92s

Travelled Distance in that time:
//no acceleration
s = (69.4 m/s) * 6.92s
s = 480.25m

Simulated Solution with time step 1/200:
480.238m