You are working for a rifle manufacturer and have been tasked with testing the consistency of the muzzle velocity on a particular rifle. You orient the rifle horizontally and aim it at a target located 50 meters away. You proceed to fire the rifle 1000 times, each time measuring the distance below the aim point (in centimeters) where the bullet hits. (download data file here)

1. Solve the problem symbolically.
2. Calculate the muzzle velocity for each drop distance given in the data file. (Think numpy arrays.)
3. Once you have an array of the muzzle velocities, a nice way to visualize the data is with a histogram. Use the following code to plot a histogram of this data:

   ```
   from matplotlib import pyplot
   pyplot.hist(v)
   pyplot.show()
   ```

   (where `v` are the muzzle velocities)
4. What range of muzzle velocities would you feel comfortable reporting to your boss?