A rocket has a total mass $M_i = 180$ kg, including 130 kg of fuel and oxidizer. The rockets is launched from the ground, starting from rest at time $t = 0$ s, and puts out exhaust with a relative speed of $v_e = 1500$ m/s at a constant burn rate of 2.50 kg/s. The burn lasts until the fuel runs out. The magnitude of the thrust force felt by the rocket is given by:

$$F = v_e \frac{dM}{dt}(0.1) \tag{0.1}$$

where v_e is the exhaust's exit velocity and M is the total mass of the rocket **and** fuel. The drag force on the rocket is given by:

$$F_{\text{drag}} = \frac{1}{2}\rho A C v^2 \tag{0.2}$$

where ρ is the density of air, A is the cross-sectional area of the rocket, and C is the drag coefficient. Assume that the radius of the rocket is $r = 20$ cm and that the drag coefficient is $C = 0.5$.The air density varies with height according to the following function:

$$\rho(h) = (1.09 - \frac{0.0065h}{300})^{2.5} \tag{0.3}$$

1. Using Python, implement Euler's method to find the position vs. time and velocity vs. time graphs for the rocket from the moment it lifts off until it hits the ground.

   Note: This is a one-dimensional problem and is similar to the other one-dimensional Euler's method problem you have done previously. The main difference here is that the mass of the rocket is continuously changing. You'll need to think about what to do to update the mass inside of your loop so that your acceleration is correct.