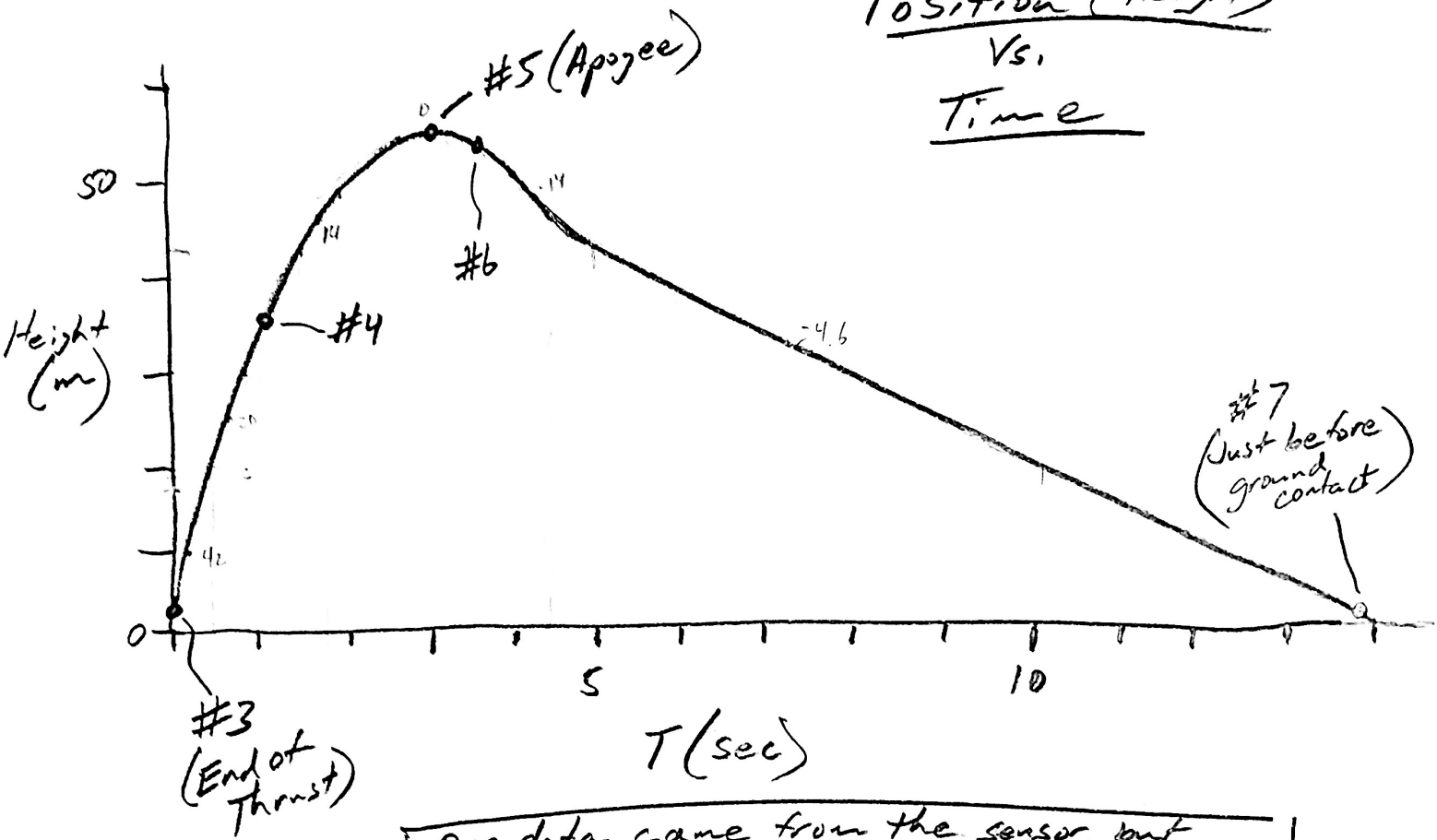
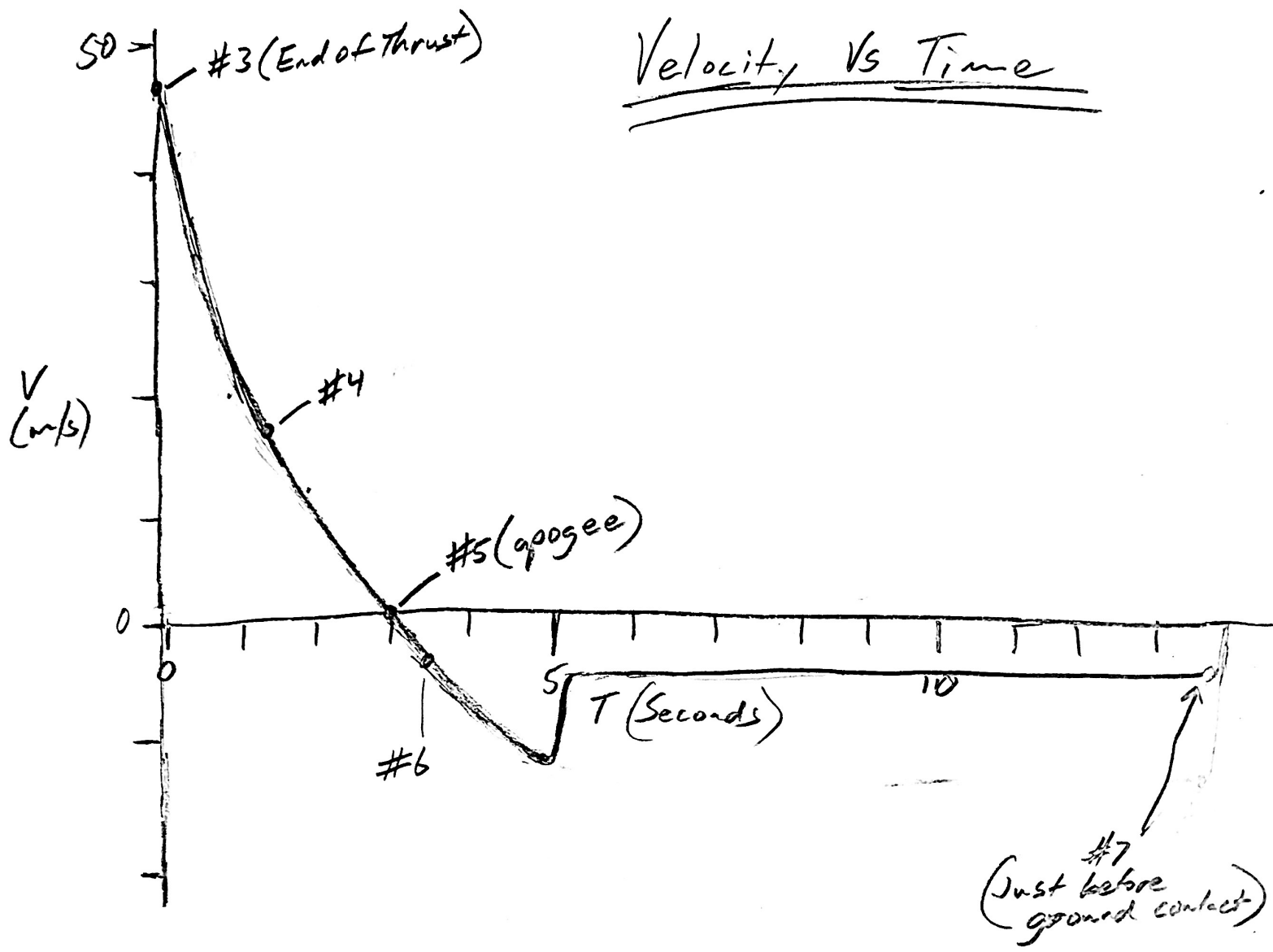


Position (Height)
Vs.
Time



Our data came from the sensor, but we adjusted the time using our video to find the time to reach the apogee.

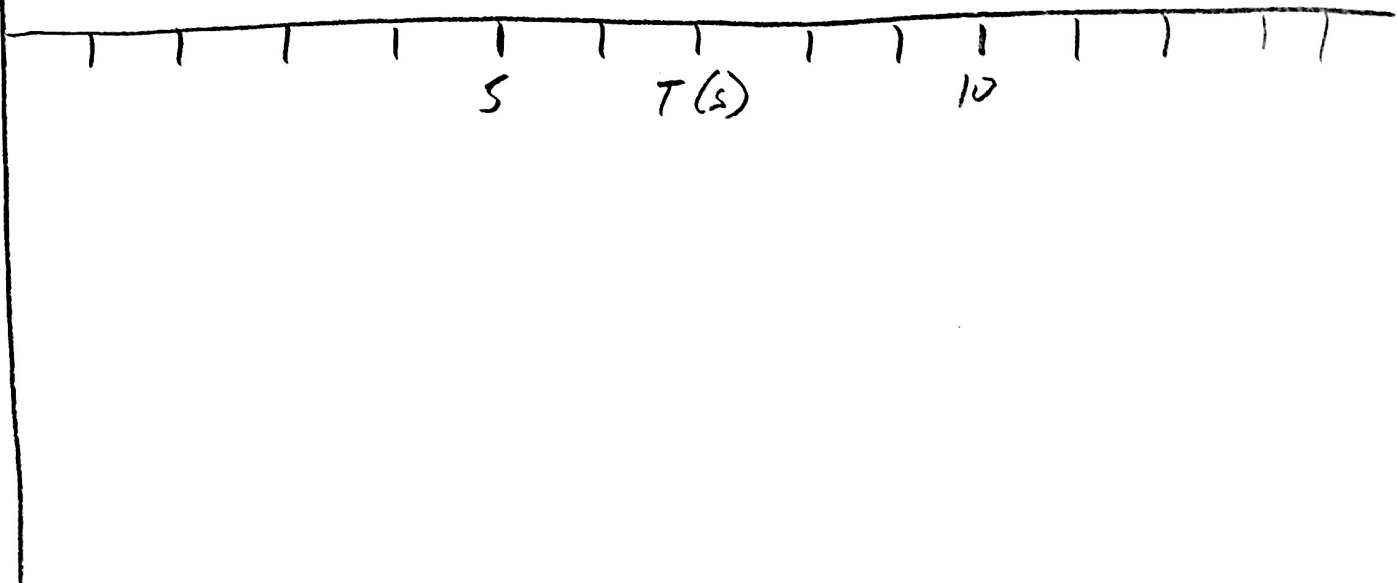
Velocity vs Time



Acceleration
Vs
Time

* Intentionally left blank to avoid giving too much away.

a
(m/s^2)



Snapshots

#1

Before Launch

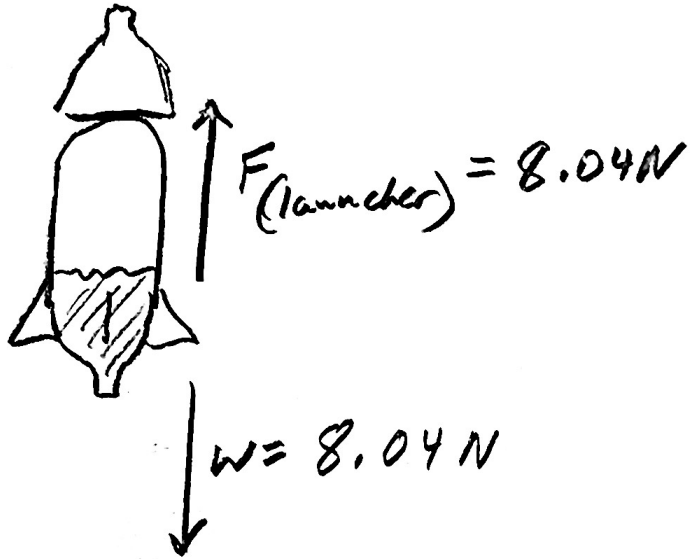
$$T = -1s$$

$$a = 0 \text{ m/s}^2$$

$$\Sigma F = 0N$$

$$m = 0.82 \text{ kg}$$

$$v = 0 \text{ m/s}$$



#2

Middle of Water Thrust Phase

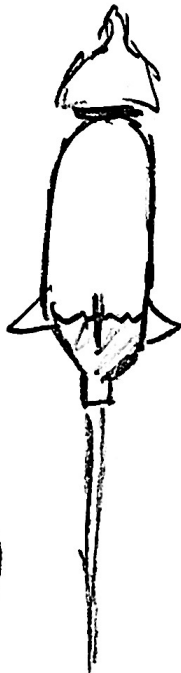
$$T = 0.038s$$

$$a = 800 \text{ m/s}^2$$

$$\Sigma F =$$

$$m = 0.42 \text{ kg}$$

$$v = 24 \text{ m/s}$$



~~ΣF~~ and individual forces intentionally left blank, but you should include them

* Continue with #3-#8

Part 4: Drag Coefficients and Cross-sectional Areas

1. C_d and A at the moment of *snapshot 4* (half-way between the end of thrust and apogee): Find the following values for this moment in time, and enter them here.
 - a. 0.01 Approximate cross-sectional area (A) that is exposed to the oncoming air, in m^2 .
 - b. 0.2 Current mass (kg)
 - c. -2.8 Current net force (N)
 - d. 17 Current speed (m/s)
 - e. 1.22 Approximate Air Density (kg/m^3)
 - f. -0.84 Current force of drag (N)
 - g. 0.476 Rocket's drag coefficient, based on the values above
2. C_d and A at the moment of *snapshot 7* (just before reaching the ground):
 - a. _____ Approximate cross-sectional area (A) that is exposed to the oncoming air, in m^2 .
 - b. _____ Current mass (kg)
 - c. _____ Current net force (N)
 - d. _____ Current speed (m/s)
 - e. 1.22 Approximate Air Density (kg/m^3)
 - f. _____ Current force of drag (N)
 - g. _____ Rocket's drag coefficient, based on the values above

* Intentionally
left blank (for
your satisfaction
of discovery)