1. Consider Example 1 from the Worked Examples section on the growth of a golden retriever puppy.

a. Find the weekly growth rate between days 115 and 150 (in lbs/week). Also, find the average growth rate between days 0 and 332.

b. Find the weekly growth rate between each of the data values given. Sketch a graph of the weight as a function of number of days, then graph the rate of weekly growth as a function of the age. At what age is the growth rate at a maximum?

2. Consider Example 2 from the Worked Examples section on the growth *Paramecium caudatum*.

a. Find the average growth rate for the first 10 weeks and compare that to the growth rate for the fifth week computed by using the data from weeks 5 and 6.

b. From the graph for the growth rate of *P. caudatum*, determine when the population is growing most rapidly and when it has its steepest decline. Calculate those values from the table.

3. Consider Example 3 from the Worked Examples section for a falling ball.

a. Graph the data and describe the geometric figure in the graph.

b. Find the average velocity over the intervals $t \in [0, 0.3]$, $t \in [0.3, 0.6]$, and $t \in [0.6, 0.9]$. Associate the average velocity with the midpoint of each of these time intervals, and sketch a graph of the average velocity as a function of time. Do these points seem to fall on a line, and if so, determine the equation of this line?

4. Consider Example 4 from the Worked Examples section for the height of a skydiver. Find the average velocity of the skydiver over the 45 sec of the data. What is the percent error in using this value for the terminal velocity as compared to the value computed in the notes?