1. (Adapted from 1.R.10)
This problem refers to Figure 1.66 on page 52 of the textbook, which shows the average monthly temperature in Albany over a twelve-month period (January is month 1). Let $A(m)$ be the average monthly temperature (in degrees Fahrenheit) in Albany in month $m$. (Remember to include the graph in your write-up.)

(a) Evaluate and interpret $A(6)$.
(b) Solve $A(m) = 45$. What is the meaning of your solution in the context of this problem?
(c) What is the warmest month in Albany? What is the coldest month in Albany?
(d) Find and interpret the average rate of change of $A(m)$ for $3 \leq m \leq 7$. (Don't forget units!)
(e) Over what interval of months is the temperature increasing? Decreasing?

2. Do Problem 1.R.30 on page 53.

3. (Adapted from 1.1.23 and 1.1.24)
This problem refers to the functions described in Table 1.6 on page 8 of the textbook. (Remember that a complete write-up should include the table of data.)

(a) According to the table, which of the three names was most popular in 1999? least popular?
(b) Evaluate and interpret the meaning of $r_h(7) - r_a(7)$.
(c) Evaluate and interpret the meanings of $r_m(5) - r_m(2)$ and $\frac{r_m(4) - r_m(0)}{4}$.
(d) Solve the inequality $r_m(t) < r_h(t)$. What is the meaning of your solution in the context of this problem?

4. (Adapted from 1.1.38)
A student leaves home to go for a walk. The student walks due north for a distance of $N$ miles, turns and walks due east a distance of $E$ miles, and then stops. Let $D$ be the total number of miles the student walks and let $H$ be how far (in miles “as the crow flies”) the student is from home upon stopping. For each of the questions below, remember to clearly explain your answers. (One or more well-labeled diagrams should certainly be included in your write-up.)

(a) What can you conclude about the student’s walk if $D = H$?
(b) In general, is $H$ a function of $D$? Is $D$ a function of $H$?
(c) Suppose now that the student walks a total of 12 miles before stopping, i.e. that $D = 12$.
   i. Is $N$ a function of $E$? Is $E$ a function of $N$?
   ii. Is $H$ a function of $E$? Is $E$ a function of $H$?