1. When a cold drink is taken from a refrigerator, its temperature is $5^\circ$ C. After 25 minutes in a $20^\circ$ C room, its temp has increased to $10^\circ$ C.

   (a) What is the temperature of the drink after 50 minutes?

   (b) When will the temperature be $15^\circ$ C?
2. A rectangular storage container with an open top is to have volume \( V = 10 \text{m}^3 \) (where \( \text{m}^3 \) indicates cubic meters). The length of the base is twice the width. Material for the base costs $10 per square meter and sides cost $6 per square meter.

Find the cost of the cheapest container.
3. A box with an open top is to be constructed from a square piece of cardboard by cutting squares from each of the corners of the square. The original square piece of cardboard is 3 feet wide and 3 feet long. Follow the following process to find the maximum value of such a box.

(a) Draw a diagram complete with labels. (Use $h$ to denote the side length of the square cut from each corner of the cardboard, since this will denote the height of the box.)

(b) Write an expression for the volume $V$.  

(c) Use the given information to write an equation that relates the variables from your diagram.

(d) Use the previous part to write volume $V$ as a function with one variable and solve.

4. Do the following problems from your textbook.

5.2 Exercises 3,17
5.3 Exercises 9,19
5.4 Exercises 1,11
2.5 Exercises 11,19,21