Part 1 (End-of-Chapter Questions)

Write the answers to the following questions using a text editor or word processor as described on the class web site under “Programming Labs and Assignments.”

Chapter 2: 5, 6, 7, 8, 15, and 16
For questions 7 and 8, see table 2.3 and the Money.java example written in class for a hint (assume a three-digit number; use parentheses and write a single expression for each question)

Part 2 (Programs)

Program #1

Write a program named Temperature.java that:
1. declares (defines) four class (or symbolic) constants
   a. freezingF = 32;
   b. boilingF = 212;
   c. freezingC = 0;
   d. boilingC = 100;
2. has two methods
   a. static void ctof(double c) that takes a temperature in Celsius and prints it in Fahrenheit
   b. static void ftoc(double f) that takes a temperature in Fahrenheit and prints it in Celsius
3. In main, call each method twice to convert the Fahrenheit values to Celsius and the Celsius values to Fahrenheit
4. $C = \frac{5}{9}(F-32)$
5. $F = \frac{9}{5}C+32$
Program #2

Write a program named `Tree.java` that draws a pine tree as illustrated.

```plaintext
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```

1. Declares a class constant named `height`, which is the height of the cone
2. Draw the cone with three for-loops
   a. The outer for loop moves the cursor from the top of the cone to the bottom; use `level` as the loop control variable and treat `height` as a constant
   b. The first nested for loop moves the cursor from the left edge of the screen to the left side of the cone
   c. The second nested for loop moves the cursor from the left side of the cone to the right side of the cone (no space between the sides of the cone at the peak)
3. Draw the base with one for loop (no blank line between the cone and the base)
4. Draw the trunk with two nested for loops
   a. The trunk is half as tall as the cone (if the height is odd, the largest integer < height/2)
   b. The outer loop moves the cursor from the top of the trunk to the bottom
   c. The inner loop moves the cursor from the left edge of the screen to the left side of the trunk (no spaces between the sides of the trunk, no blank line between base and trunk)
5. The image below shows the relationship between all of the parts of the tree for a tree with a height of 6:

   ![Diagram of tree parts]