Exercise 1:

```
import java.util.Scanner;

/** An exercise of using methods */

public class MethodExercise {

   /**main method */
   //Group A fill in the blanks for this method
   public static void main (String[] args) {
      double num1, num2, num3, avg, max;
      boolean isTriangle;

      //Get input for the three numbers
      Scanner kb = new Scanner(System.in);

      System.out.print("Enter the first number: ");
      num1 = kb.nextDouble();

      System.out.print("Enter the second number: ");
      num2 = kb.nextDouble();

      System.out.print("Enter the third number: ");
      num3 = kb.nextDouble();

      //Call calcAverage method


     //Output the result
      System.out.println("The average of the three numbers is " + avg);

      //Call findMax method


      //Output max
      System.out.println("The maximum number of the three numbers is " +
max);

      //Call sort method
```

```
      //Call isValidTriangle method


      if (isTriangle)
        System.out.println("It is a valid triangle");
      else
        System.out.println("It is not a valid triangle");

  } //end main

   /**Method calcAverage: calculates and returns the average of the
three numbers*/




   /**Method findMax: finds and returns the maximum number among the
three numbers*/




     /**Method sort: sorts and displays the three numbers in increasing
order*/




  /**Method isValidTriangle: determines if the three numbers
(representing three edges)
      can form a valid triangle*/




} //end class
```

Exercise 2:

```
/**An exercise on method overloading
 */

public class AverageOverloading {
   public static void main(String[] args) {

      //call the overloading methods respectively




   }

   /** calculate the average of two doubles */




   /** calculate the average of three doubles */




   /** calculate the average of four doubles */



}
```

Exercise 3:

Design a class name **`Pet`**, which should have the following fields:

- `name`. The name field holds the name of a pet.
- `animal`. The animal field holds the type of animal that a pet is. Example values are “Dog”, “Cat”, and “Bird”.
- `age`. The age field holds the pet’s age.

The Pet class should also have the following constructors and methods:

- No-arg constructor. This constructor sets `name` and `animal` to empty String and `age` to 0.

- A constructor that has two parameters. This constructor sets `name` and `animal` to passed values and `age` to 0.
- A constructor that has three parameters. This constructor set the three fields to passed values.
- Accessor methods for all the fields.
- Mutator methods for all the fields.

Implement a test class that create two objects with the two constructors respectively, and call the mutator and the accessor to demonstrate use of the methods.

Exercise 4:

Textbook, Page 357 (Old book Page 400). Programming Challenge. Problem 1. **Employee class**.

Exercise 5:

Textbook, Page 360 (Old book Page 403), Problem 9 (Freezing and Boiling Points).