Lab 3 Sample Test Case

Question 1

```java
public static void testStudent() {
    // Testing the constructor and the getID method
    Student s = new Student(9999999);
    System.out.println(s.getID() == 9999999);
}
```

Question 2

```java
public static void testStudent() {
    // Testing the constructor and the getID method
    Student s1 = new Student(9999999);
    System.out.println(s1.getID() == 9999999);

    // Testing the 'if' test in the constructor
    Student s2 = new Student(-9999999);
    System.out.println(s2.getID() == 0);
    Student s3 = new Student(0);
    System.out.println(s3.getID() == 0);
}
```

Question 3

```java
public static void testStudent() {
    // Testing the constructor and the getID method
    Student s1 = new Student(9999999, "Philippe");
    System.out.println(s1.getID() == 9999999);

    // Testing the getName and setName methods
    System.out.println(s1.getName() == "Philippe");
    s1.setName("Meunier");
    System.out.println(s1.getName() == "Meunier");

    // Testing the 'if' test in the constructor
    Student s2 = new Student(-9999999, "Unknown");
    System.out.println(s2.getID() == 0);
    Student s3 = new Student(0, "Unknown");
    System.out.println(s3.getID() == 0);
}
```

Question 4

```java
public static void testStudent() {
    // Testing the constructor and the getID method
    Student s1 = new Student(9999999, "Philippe");
```

```java
        System.out.println(s1.getID() == 9999999);

        // Testing the getName and setName methods
        System.out.println(s1.getName() == "Philippe");
        s1.setName("Meunier");
        System.out.println(s1.getName() == "Meunier");

        // Testing the getGrade and setGrade methods
        System.out.println(s1.getGrade() == 'A');
        s1.setGrade('F');
        System.out.println(s1.getGrade() == 'F');

        // Testing the 'if' test in the constructor
        Student s2 = new Student(-9999999, "Unknown");
        System.out.println(s2.getID() == 0);
        Student s3 = new Student(0, "Unknown");
        System.out.println(s3.getID() == 0);
}
```

Question 5

```java
public static void testStudent() {
        // Testing the first constructor and the getID method
        Student s1 = new Student(9999999, "Philippe");
        System.out.println(s1.getID() == 9999999);

        // Testing the getName and setName methods
        System.out.println(s1.getName() == "Philippe");
        s1.setName("Meunier");
        System.out.println(s1.getName() == "Meunier");

        // Testing the getGrade and setGrade methods
        System.out.println(s1.getGrade() == 'A');
        s1.setGrade('F');
        System.out.println(s1.getGrade() == 'F');

        // Testing the 'if' test in the first constructor
        Student s2 = new Student(-9999999, "Unknown");
        System.out.println(s2.getID() == 0);
        Student s3 = new Student(0, "Unknown");
        System.out.println(s3.getID() == 0);

        // Testing the second constructor
        Student s4 = new Student(9999999, "Philippe", 'B');
        System.out.println(s4.getID() == 9999999);
        System.out.println(s4.getName() == "Philippe");
        System.out.println(s4.getGrade() == 'B');

            // Testing the 'if' test in the second constructor
        Student s5 = new Student(-9999999, "Unknown", 'C');
        System.out.println(s5.getID() == 0);
        Student s6 = new Student(0, "Unknown", 'C');
        System.out.println(s6.getID() == 0);
}
```

Question 6

```java
public static void testStudent() {
    // Testing the first constructor and the getID method
    Student s1 = new Student(9999999, "Philippe");
    System.out.println(s1.getID() == 9999999);

    // Testing the getName and setName methods
    System.out.println(s1.getName() == "Philippe");
    s1.setName("Meunier");
    System.out.println(s1.getName() == "Meunier");

    // Testing the getGrade and setGrade methods
    System.out.println(s1.getGrade() == 'A');
    s1.setGrade('B');
    System.out.println(s1.getGrade() == 'B');

    // Testing the isSleeping, goToSleep, and wakeUp methods
    // As part of these tests we need to check that the grade
    // correctly changes when the students goes to sleep and
    // when the student wakes up.
    System.out.println(s1.isSleeping() == false);
    s1.goToSleep();
    System.out.println(s1.isSleeping() == true);
    System.out.println(s1.getGrade() == 'C');
    s1.wakeUp();
    System.out.println(s1.isSleeping() == false);
    System.out.println(s1.getGrade() == 'C');

    // The 'if' statement of the goToSleep method has two
    // branches: one for the 'A', 'B', and 'C' cases, and one
    // for the 'D', 'F', and 'other' cases.  We tested the first
    // branch just above, so here we test the other branch
    s1.setGrade('X');
    s1.goToSleep();
    System.out.println(s1.isSleeping() == true);
    System.out.println(s1.getGrade() == 'F');
    s1.wakeUp();
    System.out.println(s1.isSleeping() == false);
    System.out.println(s1.getGrade() == 'F');

    // Testing the 'if' test in the first constructor
    Student s2 = new Student(-9999999, "Unknown");
    System.out.println(s2.getID() == 0);
    Student s3 = new Student(0, "Unknown");
    System.out.println(s3.getID() == 0);

    // Testing the second constructor
    Student s4 = new Student(9999999, "Philippe", 'B');
    System.out.println(s4.getID() == 9999999);
    System.out.println(s4.getName() == "Philippe");
    System.out.println(s4.getGrade() == 'B');

    // Testing the 'if' test in the second constructor
    Student s5 = new Student(-9999999, "Unknown", 'C');
    System.out.println(s5.getID() == 0);
    Student s6 = new Student(0, "Unknown", 'C');
```

```java
        System.out.println(s6.getID() == 0);
    }
```