SE1011 Exam 1 Name:

You may use a note-sheet, prepared by yourself. If you use a note-sheet, turn it in with your exam. Write your initials at the top of each page except this one. Read through the whole exam before you get started. Have fun!

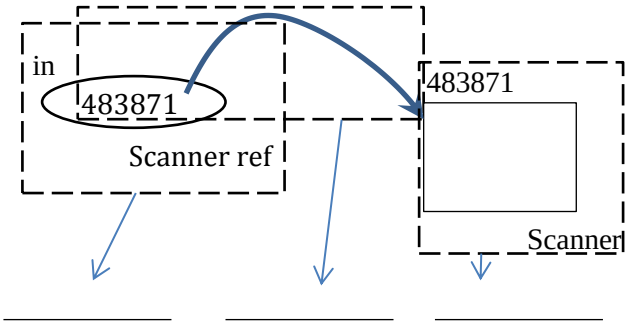
1. (20 points) In the table below, for each expression, ***circle*** the type of the result, and ***circle*** T for true or F for false, and ***write*** the value of the result. You do not need to write anything in boxes with a dash (–).

Expression	type of result	integer division occurs	**implicit** casting occurs	**explicit** casting occurs	value
5.5 + 3.5	int / double	–	T / F	T / F	–
5.0 + 1	int / double	–	T / F	T / F	–
(int)5.0 * 3	int / double	–	T / F	T / F	–
(int)(4 - 2.8)	int / double	–	T / F	T / F	–
1 + 1/2	int / double	T / F	T / F	T / F	
3/4 + 1.0	int / double	T / F	T / F	T / F	
((double) 3 + 1) / 4	int / double	T / F	T / F	T / F	
(double) (7 / 3)	int / double	T / F	T / F	T / F	
28 % 5	–	–	–	–	
4 % 10	–	–	–	–	

2. (3 points) Consider the code to the left and the memory diagram to the right. For each change in memory surrounded by the dashed lines, ***write*** the letter A, B, or C above the part of code that dictates the change.

```
← A →
Scanner in;

← B →   ←          C          →
in    =    new Scanner(System.in);
```



3. (2 points) The literals `'r'` and `"r"` represent different types in Java. ***List*** the type each represents, making clear which is which.

4. (4 points) ***Describe*** an advantage of using pseudocode or flowcharts rather than starting by writing Java code.

5. (6 points) Consider the code

```
Scanner in = new Scanner(System.in);
System.out.print("Enter an integer: ");
int index = in.nextInt();
String letters = "abcdefg";
System.out.println("A letter: " + letters.charAt(index));
System.out.println("sub: " + letters.substring(2,index));
```

Complete what will be displayed after the user enters 4 (shown in italics below):

```
Enter an integer: 4
```

6. (15 points) ***Write*** a program to prompt the user for the lengths of the sides of a rectangle and output the area. The sides of the rectangle should be able to have a decimal part.

```
/* .. don't need to write anything out here… */
public static void main(String[] ignored) {









}
```