

Please fill in your Student Number and Name.

Student Number : _____

Name:

Student Number:

University of Cape Town ~ Department of Computer Science
Computer Science 1015F ~ 2008
Test 3

Question	Max	Mark	Internal	External
1	15			
2	15			
TOTAL	30			

Marks : 30
Time : 40 minutes
Instructions:

- a) Answer all questions.
- b) Write your answers in the space provided.
- c) Show all calculations where applicable.

Question 1 [15]

- a) What do you call the process of converting from a value of primitive type to a corresponding object of its associated wrapper class? [1]

Answer: Boxing

- b) When you use the assignment operator with variables of a class type, will you be assigning a: [1]
- value?
 - primitive type?
 - local variable?
 - reference?

Answer: iv

- c) Consider the following array:

myArray[0]	7
myArray[1]	9
myArray[2]	-3
myArray[3]	6
myArray[4]	1
myArray[5]	-1

What is the value of `myArray[myArray[1] - myArray[0]]` ? [1]

Answer: -3

- d) Which of the following initializer lists correctly initializes the indexed variables of an array named `myDoubles`? [1]
- `double myDoubles[double] = {0.0, 1.0, 1.5, 2.0, 2.5};`
 - `double myDoubles[5] = new double(0.0, 1.0, 1.5, 2.0, 2.5);`
 - `double[] myDoubles = {0.0, 1.0, 1.5, 2.0, 2.5};`
 - `array myDoubles[double] = {0.0, 1.0, 1.5, 2.0, 2.5};`

Answer:

```
int sum;
for (int j=0; j<12; j++)
    { sum = 0;
    for (int k=0; k<sales.length; k++)
        if (j < sales[k].length) //not expected to check this
            sum = sum + sales[k][j];
        System.out.print(sum + " ");
    }
System.out.println();
```

d) Consider the classes below, then give the output of the main program on the next page: [5]

```
public class Person
{
    protected String name;
    protected String address;
    public Person( )
    { name = "unknown"; address = "N/A";
      System.out.println("Created unknown person");
    }
    public Person( String pname, String adr )
    { name = pname; address = adr;
      System.out.println("Created person");
    }
}

public class Child extends Person
{
    int age;
```

```

public Child (String cname, String adr, int years )
{
    super ( cname, adr );
    age = years;
    System.out.println("Created child");
}

public Child ( )
{
    age = 0;
    System.out.println("Created unknown child");
}

public String toString( )
{
    return (name + " ( " + address + ") aged " + age));
}
}

public class Test
{
public static void main ( String args[ ] )
{
    Child ann = new Child( "ann", "UCT", 6);
    Child kiddie = new Child( );
    System.out.println( kiddie );
}
}

```

Output from running Test is:

Answer:

Created person
 Created child
 Created unknown person
 Created unknown child
 unknown (N/A) aged 0