Last Name	
Student Number	
Circle Your Instructor	Cellini Ferworn McInerney

Instructions:

(a) There are 6 questions on this test . The test is worth 35% of your final mark.

(b) There is a time limit of 50 minutes.

(c) Write your answers on this sheet and on the blank sheets provided.

(d) Make sure you put your name and student # on everything

(e) Clearly identify which question you are answering.

(f) Please include comments to explain what you are doing.

1) (11 marks) Circle the syntax errors in the following Java class and explain what is wrong.

```
    public class TempConv;
    {
        public void main(String[] args);
        {
            final double BASE_TEMP = 30;
            int Deg_C
            float Deg_F;
            ConsoleReader console = new.ConsoleReader(System.in);
            System.out.print('Please enter a temperature in degrees C ');
            Deg_C = console.readInt();
            Deg  = (BASE_TEMP + (9 / 5) * (int) Deg_C);
            System.out.println('The Fahrenheit temperature is ' +
                               Deg_F + '.');
        }
    }
```

Suggested answers and marking guide

how to mark: 1/2 mark for each error, 1/2 mark for explanation.

2) (12 marks) Write a complete Java program that will be saved in a file called **Triangle.java**.
The program should output a triangular matrix of numbers in the following pattern (don't worry about leading spaces.

```
0
11
222
3333
44444
555555
…
```

The program should stop after printing 9999999999.

Suggested answers and marking guide

```
        /* This is not the only way but it is one way */
        public class Triangle
        {
            public static void main(String[] args)
            {
            for(int i=1;i<=10;i++)
```

```
            {
                for(int j=0;j<i;j++)
                {
                    System.out.print(i-1);
                }
                System.out.println();
            }
        }
    }
```

- An answer that simply uses println statements is acceptable as this question does not indicate how the result is to be achieved.

3) (3 marks) Is the following code fragment
     a) syntactically correct? (if not correct, explain why not)
     b) semantically correct? (if not correct, explain why not)
     c) written in a good style? (if not correct, explain why not)
…
```
double x = 1.5;
if(x > 2.0) System.out.println("x is less than 2); else
System.out.println("x is greater than or equal to 2");
```

Suggested answers and marking guide

    a) The code is not syntactically correct…There is a missing double quote (1 mark)
    b) The code is not semantically correct as it will do the wrong thing in the condition (1 mark)
    c) The style is not very good as there is no indentation to make it easier to see what is going on and what belongs to what. (1 mark)

4) (3 marks) When we say we perform a "cast" in Java what do we mean? Give an example of a cast.
Suggested answers and marking guide
- When we say we cast it means we are requesting that Java does an explicit type conversion. For example going from int to float. Here is an example, float x = (float) 4 * 5.0;
- 1 mark for explaining what cast does, 1 mark for mentioning the word "type", 1 mark for the example

5) (3 marks) Rewrite the following "for" loop to make it into a "while" loop.

```
for(int j = 0;j<10;j=j+1) System.out.print(j);
```

Suggested answers and marking guide
```
int j = 0;
while(j<10)
{
    System.out.print(j);
    j++;
}
```
- 1 mark for declaration of j, 1 mark for updating j, 1 mark for the condition.

6) (3 marks) How many times will "test" be printed when the following Java code fragment is run?
   …
```
double elmer = 10.0;
while(elmer <= 10.0)
{
  elmer = elmer + 1.0;
  System.out.println("test");
  if(elmer == 11.0)
      continue;
  elmer = elmer - 2.0;
}
```

Suggested answers and marking guide
    Once
- 3 marks for writing "**once**".