Answer the questions in the spaces provided on the question sheets. If you run out of room for an answer, continue on the back of the page.

Name: _____

Date: _____

Question:	1	2	3	Total
Points:	15	10	10	35
Score:				

1. Describe exactly but briefly what is the output of the program.

```
#include <stdio.h>

int c = 0;

double fun(double x) {
    x *= c;
    printf("fun:    %f\n",x);
    return(x*x);
}

int main(void) {
    double x, y;
    x = 2.;
    c++;
    printf("main 1: %f\n", x);
    y = fun(x);
    printf("main 2: %f  %f\n", x, y);
    return(0);
}
```

(a) (5 points) The first printf statement in the main program:

_____

(b) (5 points) The printf statement in the function fun:

_____

(c) (5 points) The second printf statement in the main program:

_____

2. The function below is supposed to return 1 if n equals 0 but it always returns 0.

   (a) (5 points) Why?

   (b) (5 points) Fix it such that the originally intended purpose is restored. (Use a red pen to indicate the changes in the code.)

```
int f(int n) {
     if (n = 0)
         return(1);
     else
         return(0);
}
```

3. The program below is supposed to calculate Fibonacci numbers $F_2, \ldots, F_9$ and print only F_4, F_5, and F_6 but it doesn't do it completely right.

   (a) (5 points) Describe exactly but briefly what is the output of the program:

   (b) (5 points) Fix it such that the originally intended output is produced. (Use a red pen to indicate the changes in the code.)

```
#include <stdio.h>

#define N 10

int main(void) {
    int i, j, k;
    int p;

    k = 0;  /* F[0] */
    j = 1;  /* F[1] */

    for(p = 2; p < N; p++){
        i = j + k;                          /* F[n] = F[n-1] + F[n-2] */
        if ( (p > 3) || (p < 7) ) {
            printf("  F[%d] = %5d\n", p, i);
        }
        k = j;
        j = i;
    }

    return(0);
}
```