CS2123 Data Structures

1. (5pt) What is the difference between the `typedef`'s in the left and right columns?

RE-WRITE each statement based on the declaration in the right column.

| ```c
typedef struct myData {
   int x;
   int y;
} myDataT1;
``` | ```c
typedef struct myData {
   int x;
   int y;
} *myDataT2;
``` |
| ```c
myDataT1 *p, *q;

myDataT1 r;

p = malloc(sizeof(myDataT1));

q = malloc(sizeof *q);

p->x = 5;

r.x = 7;
``` | |

2. (5pt) Suppose we have the following structures and variable declarations followed by some statements. First identify and fix the errors so there will be no compiler errors.

```
typedef struct point {
    int x;
    int y;
} pointT;

typedef struct triangle {
    pointT corner[3];
    char    color;
    char    *name;
    struct triangle *next;
}  triangleT;

triangleT p, *q;
```

	/* fix each statement (each 1pt) */
p->corner[2]->x = 6;	....
p->name = "Equilateral";	....
q.corner->y = 6;	....
q.next.color = 'r';	....

After your fixes, there will be no compiler errors. But still one of the statements will cause an error during execution time. Identify which statement and explain how to fix it (1pt).