Homework #0
RELEASE DATE: 02/21/2010
DUE DATE: NONE

1 What is the Output?

(1)
```
main() {
    int n = 5;
    n++;
    n -= 2;
    printf("%d\n", n);
}
```

(2)
```
main() {
    char c = '0';
    c++;
    printf("%c\n", c);
}
```

(3)
```
main() {
    char* s = "Java";
    char* p = s;
    p++;
    printf("%c\n", *p);
    printf("%s\n", p);
}
```

(4)
```
main() {
    char* s = "Program";
    char p[20];
    strcpy(p, s);
    (*p)++;
    printf("%c\n", *p);
    printf("%s\n", p);
}
```

(5)
```
int f(int count) {
    if (count == 1) return 1;
    count--;
    return f(count) + count / 2;
}
main() {
    printf("%d\n", f(5));
}
```

(6)
```
void change1(int a){
    a = 3;
}
void change2(int* pa){
    (*pa) = 4;
}
main() {
    int num = 5;
    change1(num);
    printf("%d\n", num);
    change2(&num);
    printf("%d\n", num);
}
```

(7)
```
int m = 5;

int run(int n){
    m += n;
    return m+1;
}
main() {
    m = run(m);
    printf("%d\n", m);
    printf("%d\n", run(m));
    printf("%d\n", m);
}
```

2 Finish the Following Code

(1)
```
int my_strlen(const char* s){
    if (s != NULL){
        int res = 0;
        /* do not use standard strlen */
        /* add your own code here */
        return res;
    }
    else{
        /* print out an error message */
        /* add your own code here */
    }
}
```

(2)
```
struct Point{
    double x;
    double y;
};

double length(Point p){
    /* add return _____; here */
}

void move(Point* pp, double step){
    /* move x by step and y by step */
    /* add your own code here */
}
```

(3)
```
double* array_copy(double[] src, int len){
    /* add your own code to finish the
        following task */
    /* allocate a memory of size len
        times sizeof(double) */
    /* copy the contents in the array src
        to the allocated memory */
    /* return the pointer to the allocated
        memory */
}
```