Problem 1

Code:

```
#include <stdio.h>

int main() {
        int lower, upper,nrow;
        double step,f,c;
        lower = 0;
        upper = 200;

        printf("Please input the number of rows: ");
        scanf("%d",&nrow);

        step = (upper - lower)/(nrow-1);

        f = lower;

        printf("F\tC\n");

        while(f<=upper){
                c = 5*(f-32)/9;
                printf("%.1f\t%.1f\n",f,c);
                f = f + step;
        }

        return(0);
}
```

Output:

```
\lstinputlistingse input the number of rows: 13
F       C
0.0     -17.8
16.0    -8.9
32.0    0.0
48.0    8.9
64.0    17.8
80.0    26.7
96.0    35.6
112.0   44.4
128.0   53.3
```

Problem 1 continued on next page...

```
144.0   62.2
160.0   71.1
176.0   80.0
192.0   88.9
```

Problem 2

Code:

```
#include <stdio.h>
#include <stdlib.h>
#include <string.h>

#define MAX_STRING_SIZE 1000

int main(){
        char *inputstring = malloc(MAX_STRING_SIZE);
        int index = 0;

        if(inputstring == NULL){
                printf("No memory!\n");
                return 1;
        }

        printf("Please input a string: ");

        fgets(inputstring, MAX_STRING_SIZE, stdin);

        while(index < strlen(inputstring)){
                if(inputstring[index]<='9'&&inputstring[index]>='0')
                        putchar(inputstring[index]);
                index++;
        }
        printf("\n");

        free(inputstring);
        return 0;
}
```

Output:

```
Please input a string: My name is Haozhe Zhang 11 3427.aaaaaaa
```

Problem 2 continued on next page...

113427

Problem 3

Code:

```
#include <stdio.h>
#include <stdlib.h>
#include <string.h>

#define MAX_STRING_SIZE 1000

int main(){
        char *inputstring = malloc(MAX_STRING_SIZE);
        int index = 0;

        if(inputstring == NULL){
                printf("No memory!\n");
                return 1;
        }

        printf("Please input a string: ");

        fgets(inputstring, MAX_STRING_SIZE, stdin);

        while(index < strlen(inputstring)){
                if(inputstring[index]<='x'&&inputstring[index]>='a')
                        inputstring[index] = inputstring[index] + 2;
                index++;
        }

        printf("\nNew String is ");
        puts(inputstring);

        free(inputstring);
        return 0;
}
```

Output:

```
Please input a string: abcdefghijklmnopqrstuvwsyz798., i
```

```
New String is cdefghijklmnopqrstuvwxyuyz798., k
```

Problem 4

Code:

```
#include <stdio.h>

int main(){
        int count = 0;
        char inputchar_1, inputchar_2;

        printf("Please input a series of words: ");

        inputchar_1 = getchar();

        if(inputchar_1 != EOF)
                inputchar_2 = getchar();
        else{
                printf("\nNumber of words is 0.\n");
                return 0;
        }

        if(inputchar_1 !=' '&&inputchar_1!='\t'&&inputchar_1!='\n'
           )
                        count ++;

        while(inputchar_2 != EOF){
                if(inputchar_1 ==' '||inputchar_1=='\t'||inputchar
                   _1=='\n')
                        if(inputchar_2 !=' '&&inputchar_2!='\t'&&
                           inputchar_2!='\n')
                                count++;
                inputchar_1 = inputchar_2;
                inputchar_2 = getchar();
        }

        printf("\nNumber of words is %d.\n", count);

        return 0;
}
```

Output:

```
Please input a series of words: hfiat udhruwei 43.fd 234jk^D
Number of words is 4.[language=C]{
```

Problem 5