

Question 1 Source Code:

```
1  #include<stdio.h>
2  #include <stdlib.h>
3
4  int main(){
5      //open file
6      FILE *fp = fopen("numbers.txt" , "w");
7      int evenNums[8];
8      int curr;
9      //since I know the list before hand I just made an array since it doesn't
10     //specify that I have to take user input to scan in the numbers
11     int numList[8] = {12,7,3,0,28,74,37,299};
12     int count = 0;
13     int i = 0;
14
15     //checking to see if file opened correctly
16     if(fp == NULL){
17         printf("File failed to open");
18         exit(-1);
19     } else{
20         //putting all numbers into the file
21         for(i = 0; i < 8; i++){
22             fprintf(fp, "%d\n", numList[i]);
23         }
24     }
25
26     //close file
27     fclose(fp);
28     //open file
29     fp = fopen("numbers.txt" , "r");
30     //checking to see if file opened correctly
31     if(fp == NULL){
32         printf("File failed to open");
33         exit(-1);
34     } else {
35         for(i = 0; i < 8; i++){
36             fscanf(fp,"%d\n",&curr);
37             if(curr % 2 == 0){
38                 evenNums[count] = curr;
39                 count++;
40             }
41         }
42     }
43     for(i = 0; i < count; i++){
44         printf("%d ",evenNums[i]);
45     }
46     return 0;
47 }
48 }
```

Question 1 Sample Output:

```
zhong@JJ-Laptop /cygdrive/c/se185/jaden_burke_quiz10
$ ./q1
12 0 28 74
```

Question 2 Source Code:

```
1  #include<stdio.h>
2  #include <stdlib.h>
3  #include <ncurses/ncurses.h>
4  #include<string.h>
5  int exponent(int base, int power);
6
7  int main(){
8      int base;
9      int power;
10
11      //I know I'm probably not supposed to use ncurses but I've been docked
12      //for formatting not being correct so I played it safe
13      //I couldn't figure out another way to put a word in between 2 scan statements
14      initscr();
15      refresh();
16      while(1){
17          mvprintw(0,0,"Enter number to power: ");
18          mvscanw(0,strlen("Enter number to power: "),"%d", &base);
19          refresh();
20
21          mvprintw(0,strlen("Enter number to power: ") + 1," to ");
22          mvscanw(0, strlen("Enter number to power: ") + 5,"%d", &power);
23          refresh();
24
25          mvprintw(1,0,"%d to the power %d = %d",base,power,exponent(base,power));
26          refresh();
27      }
28      return 0;
29  }
30
31
32  int exponent(int base, int power){
33      if(power == 0){
34          return 1;
35      } else{
36          return base * exponent(base, power - 1);
37      }
38  }
```

Question 2 Sample Input/Output:

```
Enter number to power: 2 to 3
2 to the power 3 = 8
```

Question 3 Source Code:

```
1  #include<stdio.h>
2  #include <stdlib.h>
3  int stringlen(char string[], int i);
4
5  int main(){
6      char string[100];
7      int index = 0;
8
9      printf("Enter a string: ");
10     scanf(" %s",&string);
11     printf("The length of \"%s\" = %d",string,stringlen(string,index));
12
13     return 0;
14 }
15
16 //uses end of line character as my base case
17 //if its not the end of the line, add 1 to length and re-run
18 int stringlen(char string[], int i){
19     int length = 0;
20     char c = string[i];
21     if(c == '\\0'){
22         return length;
23     } else {
24         length++;
25         return length + stringlen(string, i + 1);
26     }
27 }
```

Question 3 Sample Input/Output:

```
zhong@JJ-Laptop /cygdrive/c/se185/jaden_burke_quiz10
$ ./q3
Enter a string: potato
The length of potato = 6
zhong@JJ-Laptop /cygdrive/c/se185/jaden_burke_quiz10
$ ./q3
Enter a string: calculate
The length of calculate = 9
```