(35) Write a C program called prog1.c that will find the median value of a set of numbers using a function called find_median written by you. A filename for a file containing the data will be given on the command line. The following code fragment is an example of how it is to be used and may be used in your code if you wish:

```
double median, array[50];
int num;
/* Code goes here to read in data from file given on command line. */
median = find_median(num, array);
```

Here find_median finds the median value of the num data points contained in array[] where num will always be a positive odd number. Note that your program should consist of the functions main and find_median. Also, code in main is to print the median value after calling the function.

2. (35) Write a function that will return the value represented by a numeric character using the following function prototype:

int ascii2value(char x);

If the character is not a number, then the function should return -1. For example if the character '3' is passed, then the function should return the value 3. Show that this function works by calling it from main in which individual characters are read from the command line. Each character will have a value printed out by the program.

3. Briefly answer the following questions. Please save your answers as a comment at the end of prog2.c

a. (10) Explain why function prototypes are useful.

b. (10) How can it be determined if a file has been successfully opened?

c. (10) How can a program be written so that function prototypes are not required but the benefits of function prototypes are retained?

d. (10) What is the significance of argc in the following code fragment?

```
void main(int argc, char *argv[])
{
```

e. (10) How can data from a file be read by a program using only the scanf function?

f. (10) When can a variable be declared in a C program?

Note: You may only use the floppy disk that has been provided for this test. Also, please call your first program prog1.c and your second program prog2.c. **Please provide a printout for both programs if a printer is available.** It would be a good idea to save backup copies of your programs using file names like prog1bu.c and prog2bu.c. Please return this sheet with your name on it when you return your tests and floppies. **Be sure to include your name as a comment in each program, put your name on your disk, and sign the honor code below.**

I have neither given nor received aid on this examination_____

Print your name:_____