CS 12 - Quiz 1
January 15, 1997

1. Write code to print out the following lines using the specified commands. You must use the variables and you may not explicitly print out any spaces.

   (a) (10 pts) Given the declarations
   double $x = 12.6$;
   double $y = 5.0$;
   use cout to output the following ('␣' represents a space)

   ```
   ␣12.60
   ␣␣5.00
   ```

   Answer: By using the width and precision functions and setting the fixed flag for printing out floating point numbers, the above can be printed out by the following code:

   ```
   cout.precision(2);
   cout.setf(ios::fixed);
   cout.width(6);
   cout << x << endl;
   cout.width(6);
   cout << y << endl;
   ```

   (b) (10 pts) Given the declarations
   int $x = 24$;
   int $y = -7$;
   use printf to output the following ('␣' represents a space)

   ```
   ␣+24
   ␣␣-7
   ```

   Answer: By using the `printf` conversions the above can be printed out with this single line of code:

   ```
   printf("%+4d \n %3d \n", x, y);
   ```

2. (10 pts) Define pointer.

   Answer: A variable that contains the address of another variable.

3. (20 pts) Write a short program that reads a line of numbers from a file and writes the sum of those numbers to the screen. Each sum should be on a separate line. The input file is called "scores.dat" and contains lines of 3 numbers. An example line may be:

   76.4 83.1 92.0

   Thus the corresponding output would show:

   251.5

   Be sure to write clean, robust code (use comments, check that the file exists, allow blank lines in the input file, ...)

   Answer:

```
#include <fstream.h>

void main()
{
   ifstream input("scores.dat");   // open file for input

   if (!input) {                   // if no file exist print error message...
      cerr << "Cannot open \"score.dat\" for input\n";
      exit(0);                     // and exit
   }

   float x, y, z;                  // declarations

   while (input >> x >> y >> z)    // while there is still a line to read
      cout << x + y + z << endl;   // print the sum
}
```