CSCI 14 Programming assignment #7 (functions) -- 60 points. Due 3/22/18

1. Write a function `bool IsOddDigit( char ch );` that takes a character and returns true if the character is one of the odd digits { '1', '3', '5', '7', '9' }, otherwise false. Write a main() program that calls `IsOddDigit()` with various characters, and uses the return value from `IsOddDigit()` to decide to print one of two messages, that the character is an odd digit or that the character is not an odd digit. (20 points)

   The function `IsOddDigit()` may neither print nor accept input. You may make none of the decisions about the character's properties outside of `IsOddDigit()`.

   Test with at least all the digits '0' through '9', the letters 'a', 'b' and 'c' (both lower and upper case), and several other characters such as punctuation marks and other special characters. You may use any method you want to generate characters to send to `IsOddDigit()`. You do not have to prompt for the characters.

   Hints: "takes" and "returns" are technical terms in computer science -- a function "takes" its parameters (or arguments) and "returns" its return type or return value. This is a **tiny** function. You can write the entire program in no more than about 30 lines, including notes. (20 points)

2. Recall the diamond from assignment 6. You will now break the program into functions for the various tasks. You will have the following functions besides main():

```
// get the number of rows from the user, assuring legal and odd,
// then return it to the caller
int GetNRows( void );

// draw the shape, using helpers as needed (described below)
void DrawShape( int nRows );

// calculate number of spaces given current row and row number
int nSpaces( int nRows, int row );

// calculate number of stars given current row and row number
int nStars( int nRows, int row );

// print n copies of character c on the current row
void PrintChars( int n, char c );
```

   YOU MAY NOT USE ANY GLOBAL VARIABLES: ALL VARIABLES MUST BE DECLARED WITHIN THE APPROPRIATE FUNCTIONS AND PASSED AROUND AS NEEDED. You may not add any parameters to any of these functions. If you did the diamond correctly the first time, this program will be easy. If not, you **MUST** (re-)organize the code along these lines. Your main() function will be quite short. PrintChars() will print either spaces or stars, per the char parameter, not both. You will call it twice per row. (40 points)