Exercise 4.1

Write a program that allows the user to select whether the program will calculate the area of a triangle or of a rectangle. Implement the area calculations as functions for rectangle and triangle as separate used defined functions.

Once completed modify to detect an invalid selection.

Unguided Exercise 4.2

Write a program that allows the user to select whether the program will convert Celsius to Fahrenheit, Celsius to Kelvin, or Fahrenheit to Celsius.

Once complete consider making the following modification. It is not possible for a temperature to be below absolute zero, or 0°K, -273.15°C, and -459.67°F. Check the user input to determine if the temperature is valid, and display an error message if it is not.

In Class Exercise:

Write a loop which prints all odd numbers from 1 to 13, including 1 and 13.

Exercise 4.3

Write a program using loops that simulates compound interest. Prompt the user for the starting principle, interest rate, and the number of years of interest. Print the final result.

Class Example: Sentinel Loop

int number;

cout << "Enter a number less than 100: ";

cin >> number;

while(number >= 100)

{

cout << "Invalid Number." << endl;

cout << "Enter a number less than 100: ";

cin >> number;

}

Exercise 4.4

A forest has been recently planted on a barren plot of land. The number of trees that are initially planted is dictated by the user. The yearly reforestation rate for this particular tree type is 2%. If the initial number of trees is 250, then after year one the number of trees on the land is 250 \* .02 + 250 yielding 255 trees. At the end of year two the number of trees can be calculated by 255 \* .02 + 255. Write a loop that calculates the number of years it will take for the number of trees on the land to reach 1000 or above.