Assignment 4

1. **Calories Burned** Problem -- 20 pts.
2. **Using Files – Numeric Processing** Problem -- 30 pts.
3. **Rectangle Area**: source AreaRectangle.cpp -- 25 pts.
4. **Celsius Temperature Table** -- 25 pts.

TOTAL -- 100 pts.

Part 1

Calories Burned

Running on a particular treadmill you burn 3.9 calories per minute. Write a program that uses a "for" loop to display the number of calories burned after 10, 15, 20, 25, and 30 minutes.

Using Files – Numeric Processing

File *random.txt* (provided) contains a long list of random numbers. Write a program that opens the file, reads all the numbers from the file, calculates and displays the following:

1. The number of numbers in the file
2. The sum of all the numbers in the file (a running total)
3. The average of all the numbers in the file

Part 2

Rectangle Area

See source file AreaRectangle.cpp

Celsius Temperature Table

The formula for converting a temperature from Fahrenheit to Celsius is:

$$C = 5/9 * (F – 32)$$

where F is the Fahrenheit temperature and C is the Celsius temperature. Write a function named `celsius` that accepts a Fahrenheit temperature as an argument. The function

should return the temperature, converted to Celsius. Demonstrate the function by calling it in a loop that displays a table of the Fahrenheit temperatures 0 through 20 and their Celsius equivalents.
Hint: Function header must be: `double celsius(double fahr)`