Introduction to Programming, PIC10A
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UCLA

Homework 1
Due 5pm, Wednesday, April 12, 2017

For this assignment, submit `hrt.cpp` for problem 1 and `heron.cpp` for problem 2.

Problem 1: (Human readable time)

Write a program that converts time provided in seconds into a human readable form. (Can you tell how long 238472352 seconds are?) The input and output should be exactly:

```
Input time in seconds
[USER ENTERS A NONNEGATIVE INTEGER]
The time is X year(s), X day(s), X hour(s), X minute(s), and X second(s).
```

For example, the output to an input of 61 is

```
The time is 0 year(s), 0 day(s), 0 hour(s), 1 minute(s), and 1 second(s).
```

and the output to an input of 3612 is

```
The time is 0 year(s), 0 day(s), 1 hour(s), 0 minute(s), and 12 second(s).
```

Assume no leap years, i.e., every year is exactly 365 days. Your program must work with inputs ranging from 0 seconds to 1000 years. Do not use floating-point numbers. You may not use `stdafx.h`. Name your file `hrt.cpp`.

Hint. You might want something much "longer" than an `int`
http://en.cppreference.com/w/cpp/language/types

Hint. If you're working on MacOS or Linux, this is a problem where your code can actually behave differently on a windows machine.

Problem 2: (Heron's formula)

Write a program that takes in 3 lengths of a triangle and outputs its area. The input and output should be exactly:

```
What is length of the first side?
[USER ENTERS A DECIMAL NUMBER]
What is length of the second side?
[USER ENTERS A DECIMAL NUMBER]
What is length of the third side?
[USER ENTERS A DECIMAL NUMBER]
The area of triangle is [AREA OF THE TRIANGLE].
```

Your code should work for all reasonable inputs that correspond to the sides of a triangle. (For example, don't worry about negative inputs.) You may not use `stdafx.h`. Name your file `heron.cpp`.