Assignment 11

Submit question 1 and 2.

1. Change the `convert_secs` function so that it returns 4 values corresponding to days, hours, minutes and seconds, equivalent to a given total number of seconds. The values should be set to a "canonical form" such that

   0<=seconds<60
   0<=minutes<60
   0<=hours<24
   0<=days

   Write the function in the two ways discussed in class – either returning an appropriate `struct`, named `Time`, or returning the values in the arguments.

2. Recalling Assignment 3, Question 1, consider the following equivalent[1] expressions for the roots of a quadratic equation:

$$r_1 = \frac{-2c}{(b + \sqrt{b^2 - 4ac})}, \qquad r_2 = \frac{-b - \sqrt{b^2 - 4ac}}{2a}$$

   Write a **function** called `quadroots()`, that takes three input arguments, `a`, `b` and `c` and returns the two roots in two other pointer arguments. The function should return an integer value, which indicates the number of roots found. A negative return value indicates that the roots are complex.

   The prototype of `quadroots()` should be as follows:

```
int quadroots(double a, double b, double c,
              double *r1, double *r2);
```

   Check if the function returns a better answer when `a=10e-5, b=10e5,c=1.0` than your original program did.

[1] Note that this is equivalent, because