**Zeller’s Formula**

Example: What day of the week was the Declaration of Independence signed?

The date at the top of the document is July 4th, 1776. I believe it was actually signed on

July 2nd, however.

Ignoring this historical technicality, the day of the week upon which

July 4th, 1776, fell was Thursday.

The rule is quite complicated. It goes like this:

Let k be the day of the month. In this case, k = 4.

Let m be the month, counting March as 1 and February as 12. (Here

January and February are considered as the last months of the

preceding year. This is to make Feb. 29th [if any] be the last day

of the year. This also means that the values of C and D are those

for the preceding year, so, for example, 1 Jan 2000 would have C = 19

and D = 99.) In this case, m = 5 (July).

Let D be the last two digits of the year. In this case, D = 76.

Let C be the first two digits of the year (the century). In this

case, C = 17.

For any real number x, let [x] be the greatest integer less than or

equal to x, which you get by truncating any fractional part. Then

compute:

f = k + [(13\*m-1)/5] + D + [D/4] + [C/4] - 2\*C.

Once you have this, then f - 7\*[f/7] will give you the day of the

week, with Sunday = 0, Monday = 1, and so on.

In your case

f = 4 + [64/5] + 76 + [76/4] + [17/4] - 34

= 4 + 12 + 76 + 19 + 4 - 34

= 81

and f - 7\*[f/7] = 81 - 7\*[81/7] = 81 - 7\*11 = 81 - 77 = 4, or

Thursday.

This rule was given by a certain Rev. Zeller, and so is called

Zeller's Rule. This works for the Gregorian calendar only. There is

a simpler version for the Julian calendar. Recall that English-

speaking countries used the Gregorian calendar beginning 14 Sep 1752,

and before that used the Julian calendar.