

May 3, 2014 is Made of Sequential Digits

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If the full date of this Saturday, May 3, 2014 is written as 5-3-2014 (or simply, 532014), it only contains sequential digits 0, 1, 2, 3, 4 and 5, where each digit appears only once. I got excited about this numerical property and wondered how many more such calendar dates exist in this century. After a little bit of investigation, I found out that there are a total of 48 such dates in the 21st century. I provided a list of these dates in Table 1. Note that 24 of the 48 are expressed as six-digit calendar dates (containing digits 0 to 5) indicated in green color and the other 24 are written as seven-digit dates (made of digits 0 to 6) indicated in yellow color.

April 5, 2013 4-5-2013	May 4, 2013 5-4-2013	March 5, 2014 3-5-2014	May 3, 2014 5-3-2014	March 4, 2015 3-4-2015	April 3, 2015 4-3-2015	April 5, 2031 4-5-2031	May 4, 2031 5-4-2031
January 5, 2034 1-5-2034	May 1, 2034 5-1-2034	May 16, 2034 5-16-2034	June 15, 2034 6-15-2034	January 4, 2035 1-4-2035	April 1, 2035 4-1-2035	April 16, 2035 4-16-2035	June 14, 2035 6-14-2035
April 15, 2036 4-15-2036	May 14, 2036 5-14-2036	March 5, 2041 3-5-2041	May 3, 2041 5-3-2041	January 5, 2043 1-5-2043	May 1, 2043 5-1-2043	May 16, 2043 5-16-2043	June 15, 2043 6-15-2043
January 3, 2045 1-3-2045	March 1, 2045 3-1-2045	March 16, 2045 3-16-2045	June 13, 2045 6-13-2045	March 15, 2046 3-15-2046	May 13, 2046 5-13-2046	March 4, 2051 3-4-2051	April 3, 2051 4-3-2051
January 4, 2053 1-4-2053	April 1, 2053 4-1-2053	April 16, 2053 4-16-2053	June 14, 2053 6-14-2053	January 3, 2054 1-3-2054	March 1, 2054 3-1-2054	March 16, 2054 3-16-2054	June 13, 2054 6-13-2054
March 14, 2056 3-14-2056	April 13, 2056 4-13-2056	April 15, 2063 4-15-2063	May 14, 2063 5-14-2063	March 15, 2064 3-15-2064	May 13, 2064 5-13-2064	March 14, 2065 3-14-2065	April 13, 2065 4-13-2065

Table 1. Sequential-Digit Calendar Dates in the 21st Century.

The first three such six-digit calendar dates made of digits 0 to 5 only (each appearing once) already occurred last year (4-5-2013 and 5-4-2013) and early this year (3-5-2014) and mostly went unnoticed. The fourth one will be 5-3-2014 to occur on Saturday this week and my hope is to generate some attention to these calendar days because they are not only fun numerically but also possess the potential to serve as brainteasers.

The first such seven-digit calendar date in this century made of digits 0 to 6 only will occur in 2034, on May 16 (5-16-2034). Also, note that 2034 contain four such calendar dates, two six digits, made of only digits 0 to 5, and the other two each having seven digits, made of digits 0 to 6 only.

These calendar dates are still considered to be rare since for example, no such dates exist in this century after 2065.

Here are a few brainteaser questions I constructed related to these sequential-digit dates:

1. Which calendar date will be the first six-digit such calendar date made of only digits 0 to 5 in the next (22nd) century? (Answer: 4-5-2103)
2. Which calendar date will be the first seven-digit such calendar date made of only digits 0 to 6 in the next century? (Answer: 5-06-2134)
3. Which calendar date will be the first eight-digit such calendar date (made of digits 0 to 7) in this millennium? (Answer: 06-17-2345)
4. How many such dates existed in the 20th century? (Answer: None)
5. How many such dates exist in the 23rd century? (Answer: None)

I hope you can share this story with others, especially on May 3, 2014.