

29/04/23

[Syllogisms] → next week

Calendars

Five modals

Basics: Normal year = 365 days = 52 weeks + 1 odd day

Leap year year = 366 days = 52 weeks + 2 odd days.

Odd day:

* For any number when it is divided by 7 the remainder obtained are called odd days.

$$7) 21(3 \rightarrow 3 \text{ weeks} + \cancel{6 \text{ odd}}$$

$$\begin{array}{r} 21 \\ -21 \\ \hline \end{array}$$

6 → odd days

$$7) 14(2 \rightarrow 2 \text{ weeks}$$

$$\begin{array}{r} 14 \\ -14 \\ \hline \end{array}$$

1 → odd day

$$7) 49(7$$

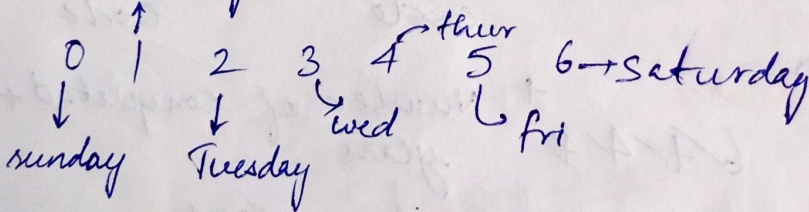
$$\begin{array}{r} 49 \\ -49 \\ \hline \end{array}$$

$$\begin{array}{r} 0 \end{array}$$

* Range of odd days = [0, 6] only.

monday

0, 1, 2, 3, 4, 5, 6



Codes for months:

Jan - 1	June - 5	November - 4
Feb - 4	July - 0	December - 6
March - 4	August - 3	
April - 0	Sept - 6	
May - 2	Octo - 1	

$$12^2 | 5^2 | 6^2 | 146$$

Codes for years

Year	Code
1601-1700	6
1701-1800	4
1801-1900	2
1901-2000	0
2001-2100	6
2101-2200	4
2201-2300	2
2301-2400	0

Modal 1

Q1) What was the day of the week on 6th March 2009.

Soln: ~~Step 1~~:

$$9 - 1 = 8 \text{ years completed}$$

Given date + Given month + Given year code

Greek calendar

6 + 4 + Number of completed years

Number of leap years.

$$\Rightarrow 6 + 4 + 6 + 8 + 2 = 26$$

$$(5) \rightarrow \text{Friday} \quad 26 \div 7 = 3 \text{ remainder } 5$$

$$\begin{array}{r} 09 \\ 4 \\ \hline 410 \\ 8 \\ \hline 1 \end{array}$$

Q2)

→ 15th July 2025

$$15 + 0 + 6 + 24 + 6$$

2000

2004

2008

200

5)

$$\begin{array}{r} 7 \overline{) 51} (7 \\ -47 \\ \hline 4 \end{array}$$

Tuesday..

Q3.)

7 Aug 2024 after Feb

$$7 + 3 + 6 + 23 + 6$$

$$\begin{array}{r} 23 \\ +21 \\ \hline 44 \end{array}$$

$$\begin{array}{r} 7 \overline{) 45} (8 \\ -42 \\ \hline 3 \end{array}$$

$$\begin{array}{r} 23 \\ +11 \\ +10 \\ \hline 44 \end{array}$$

Wednesday..

Q4.)

29 April 2023

$$29 + 0 + 6 + 22 + 5$$

$$\begin{array}{r} 29 \\ +22 \\ +11 \\ \hline 62 \end{array}$$

$$\begin{array}{r} 512 \\ 7 \overline{) 62} (8 \\ -56 \\ \hline 6 \end{array}$$

6 → Saturday..

Q5.) 10th Feb 2008

$$10 + 4 + 6 + 7 + 51$$

$$\begin{array}{r} 28 \\ 7 \overline{) 28} (4 \\ -28 \\ \hline 0 \end{array}$$

Sunday..

Modal 2:

Q1) On which dates of April 2023 on Saturday?

Ans 29th 22nd 15th 8th 1st

Q2) March 2023 Saturdays

Ans by default

1 March 2023

$$1 + 4 + 6 + 22 + 5$$

$$\begin{array}{r} 7 \overline{) 38} 5 \\ - 35 \\ \hline 3 \end{array} \text{ wednesday}$$

4th 11th 18th 25th

Q3) December 2021
Fridays

1 Dec 2021

$$1 + 6 + 6 + 20 + 5$$

$$\begin{array}{r} 7 \overline{) 38} (\\ - 35 \\ \hline 3 \end{array} \rightarrow \text{we}$$

4 11 18 25

3 10 17 24

Modal 3

Q. If 10th March 2007 was a Friday then
16th July 2016 will be Friday.

Soln:

10 Mar 2007

$$10 + 4 + 6 + 6 + 1 = 27$$

$$\begin{array}{r} 3 \\ 7 \overline{) 27} \\ \underline{21} \end{array}$$

6 → Saturday

first — +
second — +

16th July 2016

$$16 + 0 + 6 + 15 + 4 = 41$$

$$\begin{array}{r} 7 \overline{) 41} \\ \underline{35} \end{array}$$

6 → Saturday

9th March 2007
Friday

Q. If 29th April 2023 was a Monday then
1st Jan 2025 Friday.

Sat

$$1 + 1 + 6 + 24 + 6 = 38$$

$$\begin{array}{r} 5 \\ 7 \overline{) 38} \\ \underline{35} \end{array}$$

3 → Wed.

Modal 4:

8 If today is saturday then after ∞ days _____.

Soln: saturday + 2 odd days
monday..

$$\begin{array}{r} 7 \overline{) 14} \\ \underline{- 7} \\ 7 \\ \underline{- 7} \\ 0 \end{array}$$

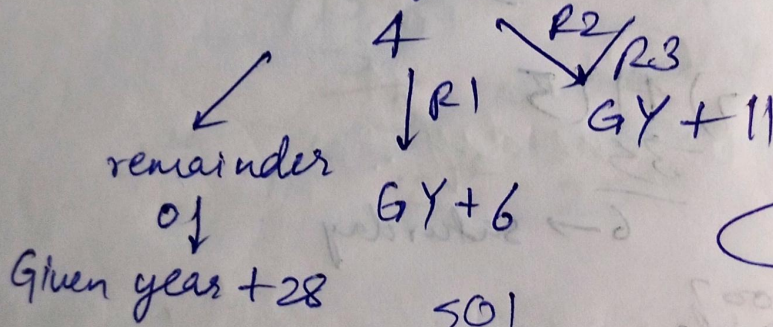
2 \rightarrow odd days

8

Modal 5:

9 In which year 2007 calender will repeat again. 2018

\Rightarrow Basic: Given year



2018

$$\begin{array}{r} 2007 \\ 41 \end{array}$$

$$\begin{array}{r} 501 \\ 4 \overline{) 2007} \\ \underline{2004} \\ 3 \end{array}$$

1st Jan 1901

$$1 + 1 + 0 + 1 + 0$$