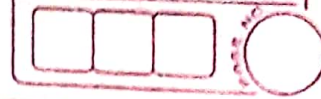


Calendar.



01-10-19

- Ordinary Year

No. of days = 365

Weeks in year = $54 + 1$.

- Leap Year.

No. of days = 366

Weeks in year = $54 + 2$.

Every leap year is divisible by 4.

- In every 100 years - 5

In every 200 years - $5 \times 2 = 10 \Rightarrow \boxed{3}$

In every 300 years - $5 \times 3 = 15 \Rightarrow \boxed{1}$

In every 400 years - $-(5 \times 4) + 1 = 21 \Rightarrow \boxed{0}$

day	No. of days
Sunday	0
Monday	1
Tuesday	2
Wednesday	3
Thursday	4
Friday	5
Saturday	6

Q What was the day of the week on 16 July 1776.

$$\rightarrow 1600 + 100 + 75 + \boxed{\text{days}}$$

- • 1st 100th leap year before the day $\rightarrow 1600$
 $\therefore$ Odd day $\rightarrow \underline{0 \text{ days}}$
 • 100 ~~day~~ years having odd day $\rightarrow \underline{5 \text{ days}}$

- 75 years $\rightarrow 18 \text{ leap year} + 57 \text{ ordinary year}$

$$[(18 \times 2) + 57] = 93$$

$\therefore$ It covers 13 weeks + 2 days

odd day till 1775 $\rightarrow 0 + 5 + 2 \rightarrow 7 \rightarrow \boxed{0}$

Jan	Feb	Mar	Apr	May	Jun	July
31	29	31	30	31	30	16 $\Rightarrow 198$

weeks till 16th July $\rightarrow 28 + \boxed{2}$

$\therefore$ Day is Tuesday.

Q. 22 Aug 2000.

↳ 2000 + days.

• 1st 100th leap year before the day
→ 2000

∴ odd day → 0 days.

Jan	Feb	Mar	Apr	May	Jun	July	Aug.
31	29	31	30	31	30	31	22

⇒ 229

⇒ 235

Weeks till 22 Aug → 33 + 4

∴ Thursday

Q. 14th Sept 1999.

↳ 1600 + 300 + 99 + days.

→ 0 days

• 300 ^{years} days → odd day = 1

98 years → ^{leap} 24^{years} + 74^{ord.} year
= 24 × 2 + 74
= 48 + 74 = 122

17 covers + 4 days.

odd days = 1 + 31 = 40 days.

Jan	Feb	Mar	Apr	May	Jun	July
31	28	31	30	31	30	31

Aug	Sept	
31	14	$\Rightarrow 256$

$$36 + \boxed{9}$$

$$\therefore 4 + 5 = 9 \Rightarrow 7 + \boxed{2}$$

$\therefore$ Tuesday

16 April 2000.

$\rightarrow$ ②

Jan	Feb	Mar	April
31	28 29	31	16
$= 107$			

$$= 15 + 2$$

$=$ Tuesday.

• Jan 1 2007 → Monday

Jan 1 2008 → ?

⇒ Tuesday

Jan 1 2009 → Thursday

• 8 Dec 2007 → Sat

8 Dec 2006 → ~~Thursday~~ Friday

• 6 March 2005 → Mon

6 March 2004 → Sat.

★ The last day of a century cannot be Tuesday.