Calender.

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.

↳ 1600 + 100 + 75 + [days]

→ • 1st 100th leap year before the day → 1600

∴ 0 odd day → 0 days

• 100 ~~day~~ years having odd day → 5 days

• 75 years → 18 leap year + 57 ordinary year

$[[18 \times 2] + 57] = 93$.

∴ It covers 13 weeks + 2 days

odd day till 1775 → 0 + 5 + 2 → 7 → [0]

Jan	Feb	Mar	Apr	May	Jun	July
31	29	31	30	31	30	16 ⇒ 198.

weeks till 16th July → 28 + [2]

∴ 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 ~~days~~ years → oddday = 1

98 years → 24 leap year + 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	$\Rightarrow 256$

$36 + \boxed{5}$

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

$\therefore$ Tuesday

16 April 2000.

↳ (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.