



CSAT

REASONING



BY – SHANTANU SIR

Calendar (कैलेण्डर) (2-3) Question

Types:

- ✓ ① History (इतिहास)
- ✓ ② Find a single day of a single year.
- ✓ ③ Calendar Repeat.
- ✓ ④ Same Year Based Question
- ⑤ Diff. Year Based Question
- ⑥ mix Question

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जुलियन सीज़ कैलेंडर

Father of Calendar

Pope Gregory
"पोप ग्रेगोरियन"
↓
13th

सुधार

1582

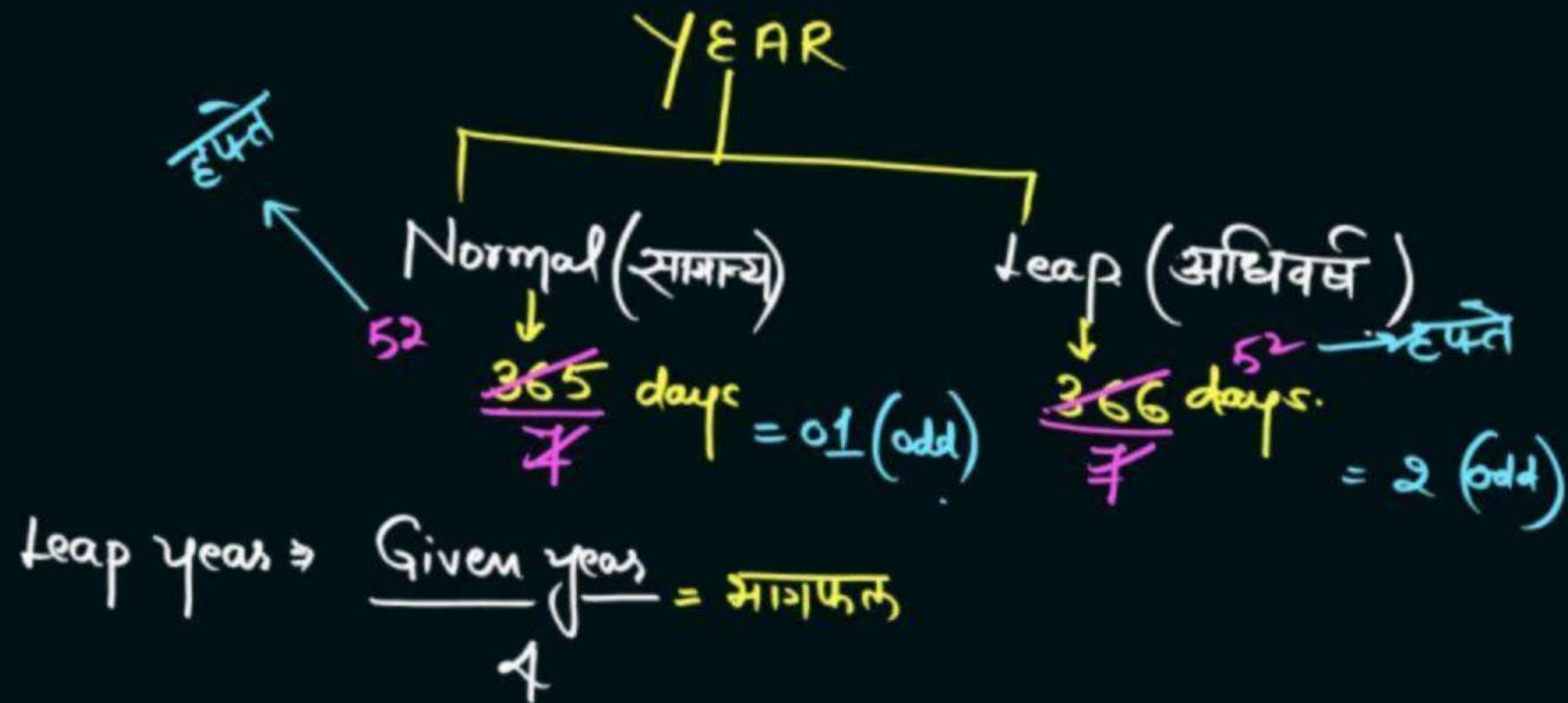
→ "18 साल"

पहले

Book

↓
"Calendar"

↓
1600 - "इस्ट इंडिया कम्पनी"



Odd Days (Extra Days) $\rightarrow \frac{\text{Given Days}}{7} = \boxed{\text{Rem.}}$

Odd Day < 7

January

↓ 4-एक

~~31~~
~~7~~

= 3 (odd days)
शेष

Christmas → 25-Dec.

| 1 week

7

↓
1 Jan

↳ New year

Q. 1 हफ्ते में कुल कितने Weekend होते हैं ?

① 1

② 2

③ 3

④ More Than 3



Q. 1 leap year $\rightarrow$ How many Weekends?

$\therefore$ 1 Week — 1 weekend

$\therefore$ 52 week $\rightarrow$ 52 weekends.

Q. If Ramesh Celebrate New year of 2023 on, Sat
So, Which Day did he Celebrate, Christmas
On Same year?

Soln →

$\left\{ \begin{array}{l} \text{Normal year} \rightarrow I^{\text{st}} \xrightarrow{\text{Same}} \text{Last day.} \\ \text{Leap year} \rightarrow I^{\text{st}} + 1 \rightarrow \text{Last day} \end{array} \right.$

$\therefore$ 1 Jan 2023 $\rightarrow$ Sat

$\therefore$ 31 Dec - 2023 $\rightarrow$ Sat

$\begin{array}{r} -7 \\ 31 \\ \hline 24 \end{array} \rightarrow \text{Sat}$

25 Dec - Sunday

1 Jan-2001 - Fri

1 Jan-2005 - ? Wed

4 Jan-2005 - Sat

1	]	+	1
2	]		
3	]	+	1
4	]	+	1
5	]	+	2

N.Y.	]	+1
N.Y.		

L.Y.	]	+2
N.Y.		

4 Jan. 1993 - Fri

4 (11) Jan. 2001 - ? Mon

Monday

93	+	1
94	+	1
95	+	1
96	+	1
97	+	2
98	+	1
99	+	1
00	+	1
01	+	2

5 Jan. 2003 - Fri

5 (21) Jan 2011 - Monday

12 - Mon
19 - Mon
20 - Tue

21 → Wednesday

3 } +1
4 } +2
5 } +1
6 } +1
7 } +1
8 } +1
9 } f2
10 } f1
11 } f1

Q. In a First Century, how many leap year and odd day we have?

$$1 \text{ L.Y} = 2 \text{ odd}$$

$$1 \text{ N.Y} = 1 \text{ odd}$$

$$\therefore 1 \text{ L.Y} = 2 \text{ odd}$$

$$\therefore 24 \times 2$$

$$100 \text{ yrs.}$$

$$\begin{array}{r} 24 \\ \hline 99 \\ \hline 4 \end{array} + 1 (\text{Normal})$$

$$\boxed{24 \text{ L.Y.}} + 76 \text{ Normal}$$

$$\downarrow$$

$$48 \text{ odd} + 76 \text{ odd}$$

$$= \boxed{124 \text{ odd}}$$

$$1 \text{ Y.}$$

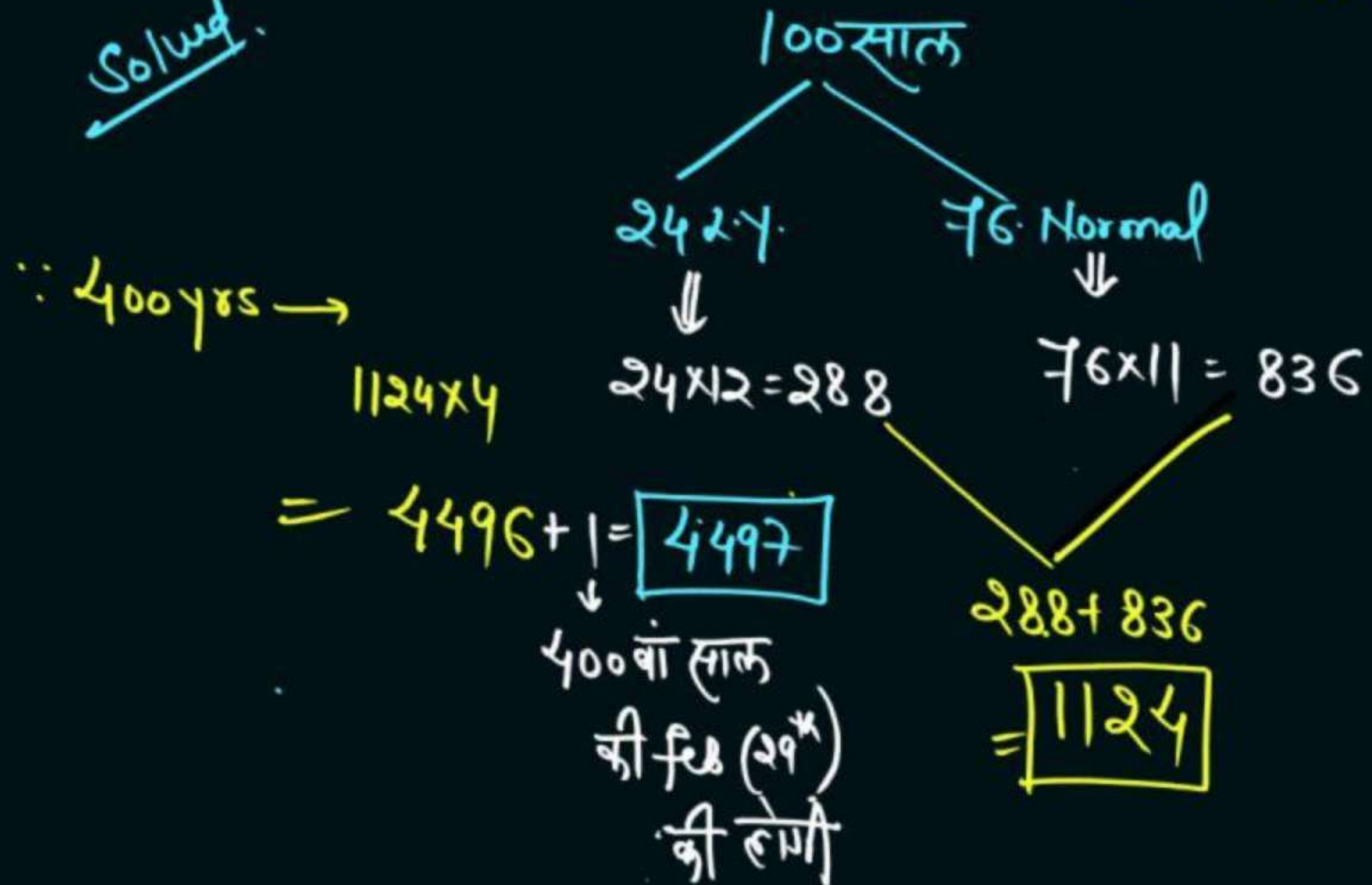
$$\begin{array}{c} 4 \\ \downarrow \\ \text{Normal} \end{array} \quad \begin{array}{c} 400 \\ \downarrow \\ \text{Century} \end{array}$$

$$\frac{124}{4} = \boxed{5 \text{ odd}}$$

शेष

Q: In a 1st 400 years, How many date of 29 was fall
 पहले 400 साल तक, कितनी बार 29 तारीख पड़ी थी? down?

Solved.



Normal year
 ↓
 11 Month (Feb)
 ↓
 29th

1st year
 ↳ 12 month
 ↳ 29th

YEAR ODD DAYS.

$$100 \text{ yrs} \longrightarrow \textcircled{5} \text{ odd}$$

$$200 \text{ yrs} \longrightarrow 5+5 = \frac{10}{2} = \textcircled{3} \text{ (शेष)}$$

$$300 \text{ yrs} \longrightarrow 5+5+5 = \frac{15}{7} = \textcircled{1} \text{ odd}$$

$$\boxed{400 \text{ yrs}} \longrightarrow 5+5+5+5+1 = \frac{21}{7} = \textcircled{0} \text{ odd}$$

$$500 \text{ yrs} \longrightarrow \frac{400}{0} + \frac{100}{5} = \boxed{5 \text{ odd}}$$

$$600 \text{ yrs} \longrightarrow \frac{400}{0} + \frac{200}{3} = \textcircled{3}$$

$$700 \text{ yrs} = 400 + 300 = \textcircled{1}$$

$$800 \text{ yrs} \longrightarrow 0$$

$$900 \Rightarrow \frac{800}{0} + 100 = \textcircled{5}$$

$$1000 \text{ yrs} \Rightarrow \frac{800}{0} + 200 = \textcircled{3}$$

$$1900 \Rightarrow \frac{1600}{0} + 300 = \textcircled{1}$$

7 feb 1624 → wed

-400

7 feb. 2024 → Wed

+400

7 feb 2424 → wed

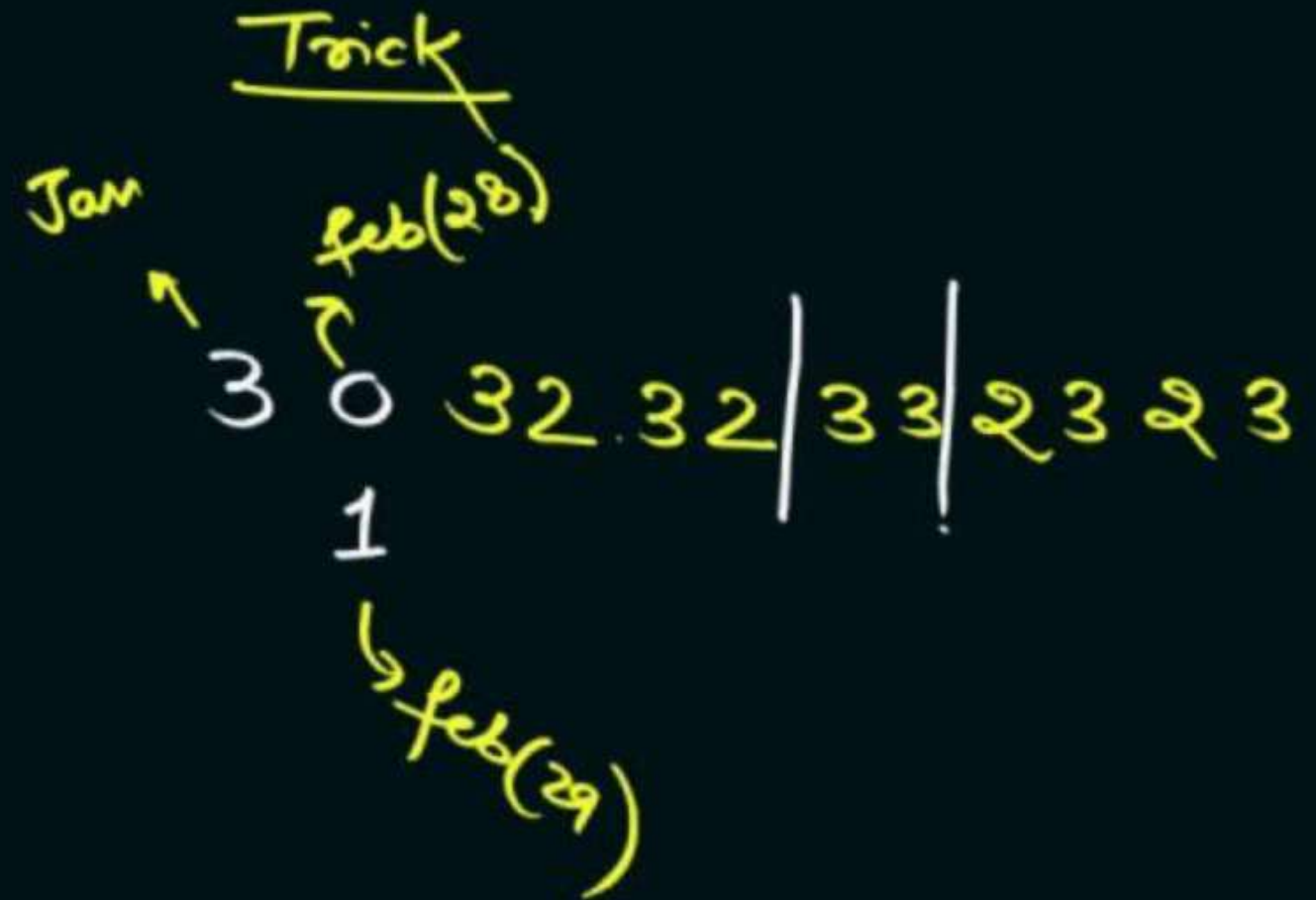
Month odd Days

$$\text{Jan} \rightarrow \frac{31}{7} = \textcircled{3}$$

$$\text{Feb} \rightarrow \frac{28}{7} = 0, \frac{29}{7} = 1$$

$$\text{Mar} = \frac{31}{7} = 3$$

$$\text{April} = \frac{30}{7} = 2$$



Jan

↑

$$3 + 0 + 3 + 1$$

$$= \frac{7}{7} \text{ odd} = 0 \text{ (Sunday)}_{21}$$

3 March 1985 ?

1 odd

$$\frac{1600}{0} + \frac{300}{1} + \frac{84}{4}$$

21 add

$$84 + 21$$

$$= \frac{105}{7} \text{ odd} = 0$$

शनिवार

Days:-

$$\text{SUN} - 7/7 = 0$$

$$\text{MON} - 1$$

$$\text{TUE} - 2$$

$$\text{WED} - 3$$

$$\text{THU} - 4$$

$$\text{FRI} - 5$$

$$\text{SAT} - 6$$

✓ 26 Mar. 1935 -

② 15 Aug - 1870 - ?

③ 13 July - 1990 - ?

26 March. 1935. 1 odd

$$3 + 0 + 26 + 1$$

$$\begin{array}{r} 1600 + 300 + \frac{8}{4} \\ \hline 0 \quad 1 \quad 4 \end{array}$$

$$\frac{30 \text{ odd}}{4} = 2 \text{ (Tue)}$$

$$\frac{40 \text{ odd}}{4} = 0$$

शुक्र

15 Aug - 1870 - 5 odd

$$\frac{1600}{0} + \frac{200}{3} + \frac{17}{4}$$

$$3+0+3+2+3+2+3+15+5$$

$$\frac{8}{7} = 1 \text{ Monday}$$

$$\frac{86}{7} \text{ odd} = 2 \text{ odd}$$

शेष

13 Jul. 1990 ⁷

$$\rightarrow \frac{1600}{0} + \frac{300}{1} + \frac{22}{4}$$

~~303232+13+7~~

$$\frac{11}{7} \text{ odd} = 6$$

$$S = (f_i)$$

7 Feb. 2024 ⁰ ?

$\rightarrow \frac{2000}{0} + \frac{\cancel{2}3}{4}$

$3 + 7 + 0$

$= \frac{10}{7} \text{ odd} = \textcircled{3} \textcircled{\text{Wed}}$

$\frac{\cancel{2}8}{7} \text{ odd} = 0$

4 Sep $\overbrace{2093}^{3 \text{ odd}} \rightarrow ?$

$$\begin{array}{r} 2000 + \overbrace{93}^{23} \\ \hline 0 \quad 4 \end{array}$$

$$30.3\cancel{2}\cancel{3}\cancel{2}.33 + \cancel{4} + \cancel{3}$$

$$\frac{12}{7} = 5 \text{ (Friday)}$$

$$\frac{\cancel{115}}{7} \text{ odd} = \textcircled{3 \text{ odd}}$$

26 feb. 2003-? ⁰²
→ 2000 + 02 odd
0

~~3+26+2~~

3-wed

4 Mar. $\overset{0}{\underbrace{2001}_{?}}$

$$\begin{array}{r} 2000 + 0 \\ \hline 0 \end{array}$$

$$\cancel{3} + 0 + \cancel{4} + 0$$

$$= 0 (\text{Sunday})$$

26 Jan. 2000 - ?

5'
1999

$$26 + 5 = \frac{31}{7} = \textcircled{3}$$

Wed

24

$$\frac{1600 + 300 + \cancel{99}}{0 \quad 1 \quad 4}$$

$$= \frac{123}{7} = \textcircled{4}$$

Same Year Based.

Q.

8 Feb. 2024 → Thu + 0

15 Aug. 2024 → Thu

$$21 + 3 + 2 + 3 + 2 + 3 + 15$$

$$= 0$$

7 July - 1964 - Fri + 1

21 Oct - 1964 - ? (Sat)

$$24 + 3 + 2 + 2/$$

$$\frac{29}{7} = \textcircled{1}$$

~~26 Jan. 2024 → Fri + 6~~

~~4 Jul. 2024 - ?~~ Thu

$$\cancel{5} + 1 + 3 + \cancel{2} + \cancel{3} + 2 + \cancel{4}$$

6

6 Jul. 2025 - Sat

11 Jan. 2025 - ?



~~11 Jan. 2025 - Friday~~

6 Jul. 2025 - Sat - 1

$$\cancel{2} + \cancel{0} + \cancel{1} + \cancel{3} + \cancel{2} + \cancel{3} + 2 + 6$$

$$\frac{8}{7} = \textcircled{1} \therefore$$

6 Nov- 19~~92~~- Sat-3
21 Jul- 19~~92~~- ? (Wed)

$$10 + 3 + 2 + 3 + 6$$

$$\frac{24}{7} = \textcircled{3}$$

2 Feb - 1996 - Sun +1

27 Jul - 1996 - ? Monday

$$27 + 3 + 2 + 3 + 2 + 27$$

$$\frac{29}{7} = \textcircled{1}$$

2024

Trick

Calendar Repeat

2023/4 = ③
शेषफल

Given year $\xrightarrow[\text{4}]{\text{Last 2 Digit}}$

शेषफल

2023
+ 11

2034

1 $\xrightarrow{\text{given year}}$ +6

2/3 $\rightarrow$ ③+11

0 $\rightarrow$ +28

$$\frac{2017}{4} \Rightarrow ? \quad \textcircled{1} \rightarrow +6$$

$$\begin{array}{r} 2017 \\ +6 \\ \hline 2023 \end{array}$$

26 Jul ¹⁰ (1789) ?

$$\rightarrow \frac{1600}{0} + \frac{100}{5} + \frac{88}{4}$$

$$\cancel{3+0+3+2+3+2+26+10}$$

= 0 (Sunday)

$$\frac{\cancel{110}}{\cancel{22}} = 5$$

4 Jul-1992 - Mon. +0

7 Nov-1992 - ? Monday

$$\cancel{27} + \cancel{3} + \cancel{2} + \cancel{3} + \cancel{7} = 0$$

③ $\rightarrow +11$

$$\frac{\cancel{2007}}{4} \rightarrow \text{Repeat}$$

$$2007 + 11$$

$$= \boxed{2018}$$

24-1
28-1
32-1
36-1
40-1

Diff Year Based:

1 odd

09 Feb-2024. for +0

26 Jul-2041 - ? Friday

$$17 \text{ yrs} + 5 \text{ L.Y.} = \frac{22 \text{ odd}}{7}$$

$$\cancel{19} + \cancel{3} + \cancel{2} + \cancel{3} + \cancel{2} + \cancel{26} + \cancel{1}$$

$$= 0$$

Rules.

1. Year Gap.
2. Leap Year
3. Year Gap + L.Y. = $\frac{\text{odd}}{7} = \text{Rem.}$
4. Month odd day

6^{odd}
 11 Mar - 2001 - Tue +1
 7 Aug - 2023 - ? wed

$$22 + 5 = \frac{27}{7} = 6$$

~~$$20 + 2 + 3 + 2 + 3 + 7 + 6$$~~

$$\frac{8}{7} = \textcircled{1}$$

9 Feb. 2004. Sat + 5
11 Aug. 2029. Thursday

~~1~~9 + ~~3~~ + ~~2~~ + 3 + 2 + 3 + ~~1~~1 + ~~4~~

= 5 odd

$$25 + 7 = \frac{32}{7} \text{ odd} = 4$$

6 Jan - 1989 - Mon + 4
 7 Jul - 2009 - ? Fri

4 odd

$$\begin{aligned}
 & \cancel{28 + 0 + 3 + 2 + 3 + 2 + 7 + 4} \\
 & \quad \quad \quad = 4
 \end{aligned}$$

$$20 + 5 = \frac{25}{7} = 4$$

5 Jan. 2004 - Monday +2
6 Mar. 2024 - ? Wednesday

$$26 + 0 + 6 + 5$$

$$20 + 6 = \frac{26}{7} = \textcircled{5}$$

$$\frac{37}{2} = \textcircled{2}$$

1009
4 feb - 2008 - fin + 4
28 feb - 2020 - ? Tuesday

$$24 + 1$$

$$12 + 3 = \frac{15}{7} = 1$$

$$= \frac{25}{7} = 4$$



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THANKS FOR WATCHING

