ANSWER with EXPLANATION

Question 1:

Answer: B) 8x
Explanation:
x weeks x days = (7x + x) days = 8x days.

Question 2:

Answer: A) Sunday
Explanation:

The year 2004 is a leap year. So, it has 2 odd days.
But, Feb 2004 not included because we are calculating from March 2004 to March 2005.
So it has 1 odd day only.
The day on 6th March, 2005 will be 1 day beyond the day on 6th March, 2004.
Given that, 6th March, 2005 is Monday.
6th March, 2004 is Sunday (1 day before to 6th March, 2005).

Question 3:

Answer: B) 4th,11th,18th,25th
Explanation:

We shall find the day on 1st April, 2001.
1st April, 2001 = (2000 years + Period from 1.1.2001 to 1.4.2001)
Odd days in 1600 years = 0
Odd days in 400 years = 0
Jan. Feb. March April
(31 + 28 + 31 + 1) = 91 days 0 odd days.
Total number of odd days = (0 + 0 + 0) = 0
On 1st April, 2001 it was Sunday.
In April, 2001 Wednesday falls on 4th, 11th, 18th and 25th.

Question 4:

Answer: B) Friday
Explanation:

The year 2006 is an ordinary year. So, it has 1 odd day.
So, the day on 8th Dec, 2007 will be 1 day beyond the day on 8th Dec, 2006.
But, 8th Dec, 2007 is Saturday
S0, 8th Dec, 2006 is Friday.

Question 5:

Answer: D) Sunday
Explanation:

The year 2004 is a leap year. It has 2 odd days.
The day on 8th Feb, 2004 is 2 days before the day on 8th Feb, 2005.
Hence, this day is Sunday

Question 6:

Answer: B) Tuesday

Explanation:

The year 2007 is an ordinary year. So, it has 1 odd day.

1st day of the year 2007 was Monday

1st day of the year 2008 will be 1 day beyond Monday

Hence, It will be Tuesday.

Question 7:

Answer: D) April, July

Explanation:

If the period between the two months is divisible by 7, then that two months will have the same calender .
(a). Oct + Nov = 31 + 30 = 61 (not divisible by 7)
(b). Apr + May + Jun + Jul + Aug + Sep + Oct = 30 + 31 + 30 + 31 + 31 + 30 + 31 = 214 (not divisible by 7)
(c). Jun + July + Aug + Sep = 30 + 31 + 31 + 30 = 122 (not divisible by 7)
(d). Apr + May + June = 30 + 31 + 30 = 91 (divisible by 7
Hence, April and July months will have the same calendar

Question 8:

Answer: B) 8

Explanation:

This can be illustrated with an example.
Ex: 1896 is a leap year.The next leap year comes in 1904 (1900 is not a leap year).

Question 9:
Answer: A) 52
Explanation:

Weekend means Saturday & Sunday together. In total we have 52 weeks in a year. So there are 52 weekends in a year.
In normal we have **104** Weekend Days.
We know that a Each normal year has 365 days or 52 weeks plus one day, and each week has two weekend days, which means there are approximately 104 weekend days each year.
Whereas in a leap year we have 366 days it adds one more day to the year. And what makes the change is the starting day of the year.

Question 10:

Answer: C) Thursday
Explanation:

We know that,
Odd days --> days more than complete weeks
Number of odd days in 400/800/1200/1600/2000 years are **0.**
Hence, the number of odd days in first 1600 years are 0.
Number of odd days in 300 years = 1
Number of odd days in 49 years = **(12 x 2 + 37 x 1) = 61 days = 5 odd days**

Total number of odd days in 1949 years = **1 + 5 = 6 odd days**
Now look at the year 1950
Jan 26 = 26 days = **3 weeks + 5 days = 5 odd days**
Total number of odd days = **6 + 5 = 11 => 4 odd days**

Odd days :-
0 = sunday ;
1 = monday ;
2 = tuesday ;
3 = wednesday ;
4 = thursday ;
5 = friday ;
6 = saturday

Therefore, **Jan 26th 1950** was **Thursday.**

Question 11:

Answer: B) 24
Explanation:

Given year is divided by 4, and the quotient gives the number of leap years.
Here, 100%4 = 25.
But, as 100 is not a leap year => 25 - 1= 24 leap years.

Question 12:

Answer: C) 72
Explanation:

Given year is divided by 4, and the quotient gives the number of leap years.
Here, 300%4 = 75.
But, as 100,200 and 300 are not leap years => 75 - 3= 72 leap years.

Question 13:

Answer: D) 2018
Explanation:

Count the number of odd days from the year 2007 onwards to get the sum equal to 0 odd day.

Year	:	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Odd day	:	1	2	1	1	1	2	1	1	1	2	1

Sum = 14 odd days ≡ 0 odd days.

∴ Calendar for the year 2018 will be the same as for the year 2007.

Question 14:

Answer: D) 5th, 12th, 19th, 26th
Explanation:

Let us find the day on 1st July, 2004.
2000 years have 0 odd day. 3 ordinary years have 3 odd days.

Jan. Feb. March April May June July
31 + 29 + 31 + 30 + 31 + 30 + 1
= 183 days = (26 weeks + 1 day) = 1 t .
Total number of odd days = (0 + 3 + 1) odd days = 4 odd days. '
:. 1st July 2004 was 'Thursday',-,-
Thus, 1st Monday in July 2004 _as on 5th July.
Hence, during July 2004, Monday fell on 5th, 12th, 19th and 26th.

Question 15:

Answer: C) 2011

Explanation:

NOTE :
Repetition of leap year ===> Add +28 to the Given Year.
Repetition of non leap year
Step 1 : Add +11 to the Given Year. If Result is a leap year, Go to step 2.
Step 2: Add +6 to the Given Year.

Solution :
Given Year is 2005, Which is a non leap year.
Step 1 : Add +11 to the given year (i.e 2005 + 11) = 2016, Which is a leap year.
Step 2 : Add +6 to the given year (i.e 2005 + 6) = 2011
Therfore, The calendar for the year 2005 will be same for the year 2011

Question 16:

Answer: A) Saturday

Explanation:

350 days = (350/7=50 weeks) i.e No odd days,
So it will be a Saturday.

Question 17:

Answer: A) Friday

Explanation:

15 Aug, 1947 = (1946 years + Period from 1.1.1947 to 15.8.1947)

Odd days in 1600 years = 0

Odd days in 300 years = 1

46 years = (35 ordinary years + 11 leap years) = (35 x 1 + 11 x 2)= 57 (8 weeks + 1 day) = 1 odd day
Jan. Feb. Mar. Apr. May. Jun. Jul. Aug
(31 + 28 + 31 + 30 + 31 + 30 + 31 + 15) = 227 days = (32 weeks + 3 days) = 3 odd days.
Total number of odd days = (0 + 1 + 1 + 3) = 5 odd days.

Question 18:

Answer: D) Saturday

Explanation:

Each day of the week is repeated after 7 days. So, after 63 days, it will be Monday.
After 61 days, it will be Saturday.

Question 19:

Answer: C) Tuesday

Explanation:

100 years contain 5 odd days.

∴ Last day of 1^{st} century is Friday.

200 years contain (5 x 2) ≡ 3 odd days.

∴ Last day of 2^{nd} century is Wednesday.

300 years contain (5 x 3) = 15 ≡ 1 odd day.

∴ Last day of 3^{rd} century is Monday.

400 years contain 0 odd day.

∴ Last day of 4^{th} century is Sunday.

This cycle is repeated.

∴ Last day of a century cannot be Tuesday or Thursday or Saturday.

Question 20:

Answer: B) Friday

Explanation:

On 31st December, 2005 it was Saturday.
Number of odd days from 2006 to 2009 = (1 + 1 + 2 + 1) = 5 days.

On 31st December 2009, it was Thursday.
Thus, on 1st Jan, 2010 it is Friday

Question 21:

Answer: A) Tuesday

Explanation:

16th July, 1776 = (1775 years + Period from 1st Jan, 1776 to 16th July, 1776)
Counting of odd days :
1600 years have 0 odd day.
100 years have 5 odd days.
75 years = (18 leap years + 57 ordinary years) = [(18 x 2) + (57 x 1)] = 93 (13 weeks + 2 days) = 2 odd days
1775 years have (0 + 5 + 2) odd days = 7 odd days = 0 odd day.

Jan Feb Mar Apr May Jun Jul
31 + 29 + 31 + 30 + 31 + 30 + 16 = 198 days= (28 weeks + 2 days)
Total number of odd days = (0 + 2) = 2.
Required day was 'Tuesday'.

Question 22:

Answer: A) Sunday

Explanation:

28 May, 2006 = (2005 years + Period from 1.1.2006 to 28.5.2006)
Odd days in 1600 years = 0
Odd days in 400 years = 0
5 years = (4 ordinary years + 1 leap year) = (4 x 1 + 1 x 2) = 6 odd days
(31[jan] + 28 [Feb]+ 31[Mar] + 30[April] + 28[May]) = 148 dayss = (21 weeks + 1 day) = 1 odd day.
Total number of odd days = (0 + 0 + 6 + 1) = 7 = 0 odd days.
Given day is Sunday

Question 23:

Answer: A) 1999

Explanation:

NOTE :
Repetition of leap year ===> Add +28 to the Given Year.
Repetition of non leap year
Step 1 : Add +11 to the Given Year. If Result is a leap year, Go to step 2.
Step 2: Add +6 to the Given Year.

Solution :
Given Year is 1993, Which is a non leap year.
Step 1 : Add +11 to the given year (i.e 1993 + 11) = 2004, Which is a leap year.
Step 2 : Add +6 to the given year (i.e 1993 + 6) = 1999
Therfore, The calendar for the year 1993 will be same for the year 1999

Question 24:

Answer: C) Thursday

Explanation:

First,we count the number of odd days for the left over days in the given period.
Here,given period is 12.2.1986 to 1.1.1987
Feb Mar Apr May June July Aug Sept Oct Nov Dec Jan
16 31 30 31 30 31 31 30 31 30 31 1 (left days)
2 + 3 + 2 + 3 + 2 + 3 + 3 + 2 + 3 + 2 + 3 + 1(odd days) = 1 odd day
So,given day Wednesday + 1 = Thursday is the required result.

Question 25:

Answer: B) 2052

Explanation:

NOTE :
Repetition of leap year ===> Add +28 to the Given Year.
Repetition of non leap year
Step 1 : Add +11 to the Given Year. If Result is a leap year, Go to step 2.
Step 2: Add +6 to the Given Year.

Solution :
Given Year is 2024, Which is a leap year.
So, Add +28 to the given year (i.e 2024 + 28) = 2052
Therfore, The calendar of the year 2024 can be used again in the year 2052.