Problems on Calendar

1.

It was Sunday on Jan 1, 2006. What was the day of the week Jan 1, 2010?

Sunday

Saturday

Friday

Wednesday

Answer: Option

Explanation:

On 31st December, 2005 it was Saturday.

Number of odd days from the year 2006 to the year 2009 = (1 + 1 + 2 + 1) = 5 days.

∴ On 31st December 2009, it was Thursday.

Thus, on 1st Jan, 2010 it is Friday.

2.

What was the day of the week on 28th May, 2006?

Thursday

Friday

Saturday

Sunday

Answer: Option

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

Jan. Feb. March April May (31 + 28 + 31 + 30 + 28) = 148 days

∴ 148 days = (21 weeks + 1 day) ≡ 1 odd day.

Total number of odd days = (0 + 0 + 6 + 1) = 7 ≡ 0 odd day.

Given day is Sunday.

3.

What was the day of the week on 17th June, 1998?

Monday

Tuesday

Wednesday

Thursday

Answer: Option

Explanation:

17th June, 1998 = (1997 years + Period from 1.1.1998 to 17.6.1998)

Odd days in 1600 years = 0

Odd days in 300 years = (5 x 3) $\equiv$ 1

97 years has 24 leap years + 73 ordinary years.

Number of odd days in 97 years (24 x 2 + 73) = 121 = 2 odd days.

Jan. Feb. March April May June (31 + 28 + 31 + 30 + 31 + 17) = 168 days

$\therefore$ 168 days = 24 weeks = 0 odd day.

Total number of odd days = (0 + 1 + 2 + 0) = 3.

Given day is Wednesday.

4.
What will be the day of the week 15th August, 2010?
Sunday
Monday
Tuesday
Friday
Answer: Option
Explanation:

15th August, 2010 = (2009 years + Period 1.1.2010 to 15.8.2010)

Odd days in 1600 years = 0

Odd days in 400 years = 0

9 years = (2 leap years + 7 ordinary years) = (2 x 2 + 7 x 1) = 11 odd days $\equiv$ 4 odd days.

Jan. Feb. March April May June July Aug. (31 + 28 + 31 + 30 + 31 + 30 + 31 + 15) = 227 days

$\therefore$ 227 days = (32 weeks + 3 days) $\equiv$ 3 odd days.

Total number of odd days = (0 + 0 + 4 + 3) = 7 $\equiv$ 0 odd days.

Given day is Sunday.

5.
Today is Monday. After 61 days, it will be:
Wednesday

Saturday
Tuesday
Thursday
Answer: Option
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.

6.
If 6th March, 2005 is Monday, what was the day of the week on 6th March, 2004?
Sunday
Saturday
Tuesday
Wednesday
Answer: Option
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).

7.
On what dates of April, 2001 did Wednesday fall?
1st, 8th, 15th, 22nd, 29th
2nd, 9th, 16th, 23rd, 30th
3rd, 10th, 17th, 24th
4th, 11th, 18th, 25th
Answer: Option
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.

8.

How many days are there in x weeks x days?

7x^2

8x

14x

7

Answer: Option

Explanation:

x weeks x days = (7x + x) days = 8x days.

9.

The last day of a century cannot be

Monday

Wednesday

Tuesday

Friday

Answer: Option

Explanation:

100 years contain 5 odd days.

∴ Last day of 1st century is Friday.

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

∴ Last day of 2nd century is Wednesday.

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

∴ Last day of 3rd century is Monday.

400 years contain 0 odd day.

∴ Last day of 4th century is Sunday.

This cycle is repeated.

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

10.

On 8th Feb, 2005 it was Tuesday. What was the day of the week on 8th Feb, 2004?

Tuesday

Monday

Sunday

Wednesday

Answer: Option

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.

11.
The calendar for the year 2007 will be the same for the year:
2014
2016
2017
2018
Answer: Option
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.

12.
Which of the following is not a leap year?
700
800
1200
2000
Answer: Option
Explanation:

The century divisible by 400 is a leap year.

∴ The year 700 is not a leap year.

13.
On 8th Dec, 2007 Saturday falls. What day of the week was it on 8th Dec, 2006?
Sunday
Thursday
Tuesday
Friday
Answer: Option
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.

∴ 8th Dec, 2006 is Friday.

14.
January 1, 2008 is Tuesday. What day of the week lies on Jan 1, 2009?
Monday
Wednesday
Thursday
Sunday
Answer: Option
Explanation:

The year 2008 is a leap year. So, it has 2 odd days.

1st day of the year 2008 is Tuesday (Given)

So, 1st day of the year 2009 is 2 days beyond Tuesday.

Hence, it will be Thursday.

15.
January 1, 2007 was Monday. What day of the week lies on Jan. 1, 2008?
Monday
Tuesday
Wednesday
Sunday
Answer: Option
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.