

Chandan Mandal(12-Apr-2016).



## Day of the Date

### Finding Numbers of Months

#### Century offset calculation (Gregorian Calendar):

**Step1** :Take the first two digit of the given year.

**Step2** :Calculate the next highest multiple of 4 for the first two digit number.

**Step3** :Subtract 1 from the number.

**Step4** :Then, subtract the first two digit of the given year

**Step5** :Finally, multiply the resultant value with 2.

#### Example:

Calculate centry offset for 1900s century.

Let us take the first two digit 19.

The next highest multiple of 4 for the first two digit number 19 is 20.

Subtract 1 from the number. i.e. 20-1

Subtract the first two digit of the given number i.e ((20-1)-19)

Finally, multiply the resultant value with 2..

1900s = ((20-1)-19)\*2 = 0.

Below given Gregorian Century Offsets table shows the other century and offset values,

Century	Offset
300, 700, 1100, 1500,1900, etc.	0
400, 800, 1200, 1600, 2000, etc.	6
100, 500, 900, 1300, 1700, etc.	4
200, 600, 1000, 1400, 1800, etc.	2

#### Find the Month Offset:

Consider there are 4 weeks in a month, which means  $4 \times 7 = 28$  days. January has 31 days. The days remaining are  $31 - 28 = 3$ . The reminder helps you in calculating the numbers for each month.

Initially, Take Jan as 0

February = ( Number of days in Jan + Remaining days in Jan ) / 7 =  $(31+0)/7 = 3$

March = ( Number of days in Feb + Remaining days in Feb ) / 7 =  $(28+3)/7 = 3$

April = ( Number of days in Mar + Remaining days in Mar ) / 7 =  $(31+3)/7 = 6$

Continue the same process till December... The numbers for the months are,



**Month Offsets table:**

Month	Offset
January	0
February	3
March	3
April	6
May	1
June	4
July	6
August	2
September	5
October	0
November	3
December	5

Numbers for the weekdays are,

Sunday	0
Monday	1
Tuesday	2
Wednesday	3
Thursday	4
Friday	5
Saturday	6

You are about to remember this table before proceeding with the trick.  
Now let us play the trick

**Remember the formula Century offset + Year offset + Month offset + Day Offset**  
Where,

Day Offset = Given day mod 7

Year Offset = ( Last two digit of year + (Last two digit of year / 4) ) mod 7

if the given year is leap year and month is Jan/Feb, then Year Offset = ( ( Last two digit of year + (Last two digit of year / 4) ) mod 7 ) - 1

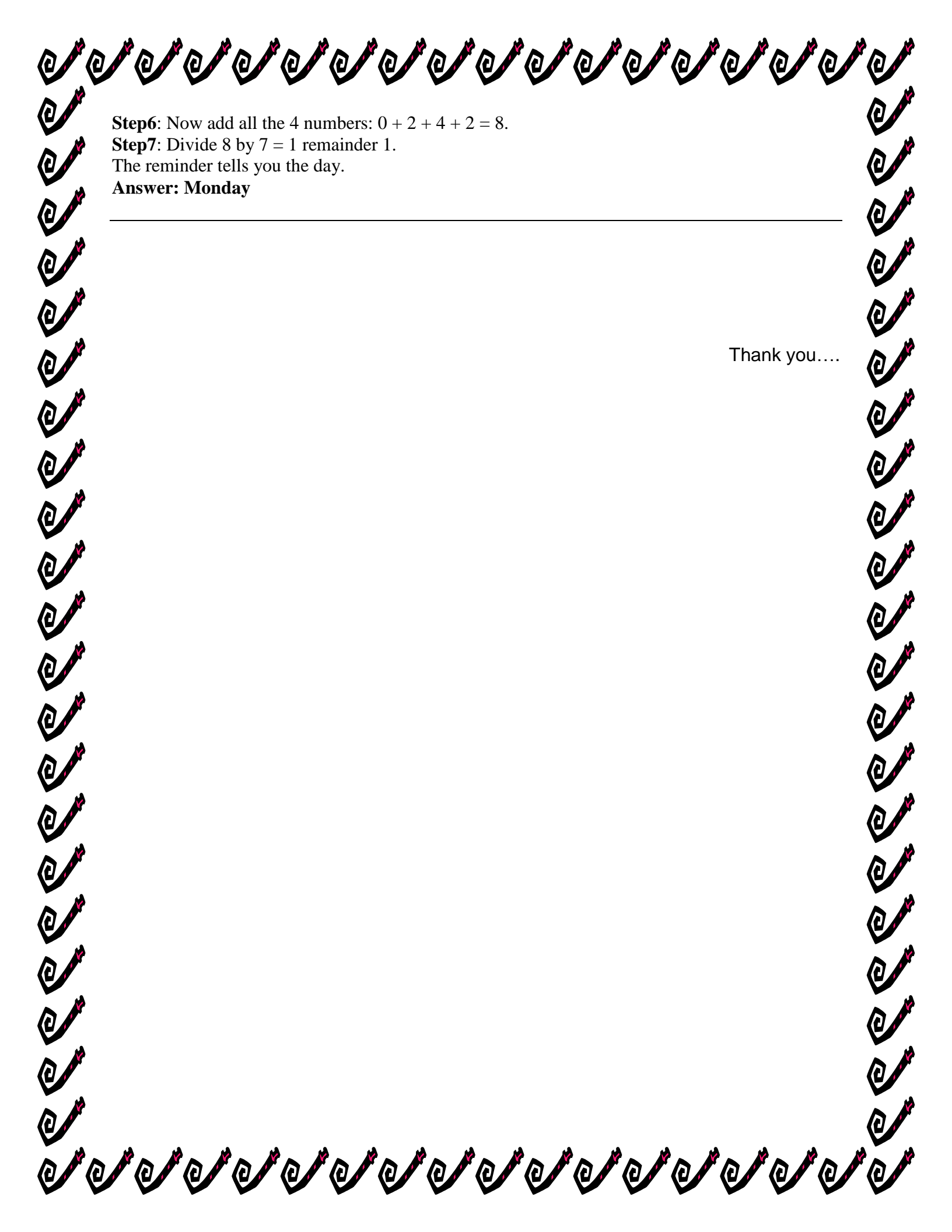
**Step1:** Ask for any specific date and challenge them you could tell the weekday of the date mentioned without any calculation. Example: 23<sup>rd</sup> June 1986

**Step2:** Take the century offset from the first table, 1900 is 0.

**Step3:** Calculate the year offset for 86 is  $((86 + 86/4) \bmod 7) = 2$

**Step4:** Take the month offset from the second table, June is 4.

**Step5:** Calculate the day offset, that is  $23 \bmod 7 = 2$



**Step6:** Now add all the 4 numbers:  $0 + 2 + 4 + 2 = 8$ .

**Step7:** Divide 8 by 7 = 1 remainder 1.  
The remainder tells you the day.

**Answer: Monday**

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Thank you....