

## Day of the Week - Mental Calculation

Over the years, I've come across a few different ways to mentally calculate the day of any date. The method below is the one I found by far the easiest to learn.

You'll need to commit the month, century and day codes to memory, plus the method itself of course. It also helps to memorize the multiplication tables at the bottom of the page.

Remember to check for leap years when calculating January and February dates, and don't get fooled by people giving you bogus dates like September 31st! Keep practicing and have fun!

<u>MONTH CODE</u>	<u>CENTURY CODE</u>	<u>DAY CODE</u>
1) January      1 (0)*	1600s    6	Sunday      1
2) February    4 (3)*	1700s    4	Monday      2
3) March        4	1800s    2	Tuesday     3
4) April        0	1900s    0	Wednesday   4
5) May          2	2000s    6	Thursday    5
6) June         5		Friday       6
7) July         0		Saturday    0
8) August       3		
9) September   6		
10) October    1		
11) November   4		
12) December   6		
	This cycle repeats forever! Divide first 2 digits by 4. Use the remainder to get the code.	
	Remainder of 0 = 6	
	Remainder of 1 = 4	
	Remainder of 2 = 2	
	Remainder of 3 = 0	

\*Use these figures for leap years

To determine leap years:

- Every fourth year is a leap year            = 2004, 2008, 2012 etc.
- Every hundredth year is NOT a leap year   = 1900, 2100, 2200 etc.
- Every four hundred years IS a leap year   = 1600, 2000, 2400 etc.

### METHOD

Add the results of steps (a) to (e):

- a) The date of the month
- b) The month code
- c) The century code
- d) The last two digits of the year
- e) Divide (d) by 4 and omit remainder [If (d) is less than 4, then (e) is 0.]

Now divide by 7. The remainder is the day code. If total is less than 7, leave it. That's your answer.

Example: 14/02/1966

- a) 14      b) 4      c) 0      d) 66      e) 16

Total: 14+4+0+66+16 = 100 --> 100/7 = 14 and remainder of 2 --> 2 = Monday

### HOW TO PERFORM THE CALCULATION FASTER

Adding up steps a) to e) last will take longer and give you a bigger number to divide by 7. Try getting rid of multiples of seven as you go. Even though there are extra steps, you will always work with smaller numbers, which actually speeds up the process.

Using the same steps from above:

- a) 14 (-14) = 0
- b) 4            = 4
- c) 0            = 0
- d) 66 (-63) = 3
- e) 16 (-14) = 2

Total: 4+3+2 = 9 --> 9/7 = 1 and remainder of 2 --> 2 = Monday

### MULTIPLICATION TABLES

Multiples of 4			Multiples of 7		
1) 4	9) 36	17) 68	1) 7	8) 56	
2) 8	10) 40	18) 72	2) 14	9) 63	
3) 12	11) 44	19) 76	3) 21	10) 70	
4) 16	12) 48	20) 80	4) 28	11) 77	
5) 20	13) 52	21) 84	5) 35	12) 84	
6) 24	14) 56	22) 88	6) 42	13) 91	
7) 28	15) 60	23) 92	7) 49	14) 98	
8) 32	16) 64	24) 96			